

# MANUFACTURERS' RECORD

A  
WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

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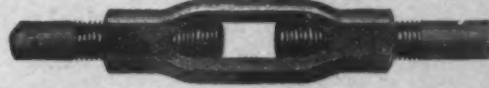
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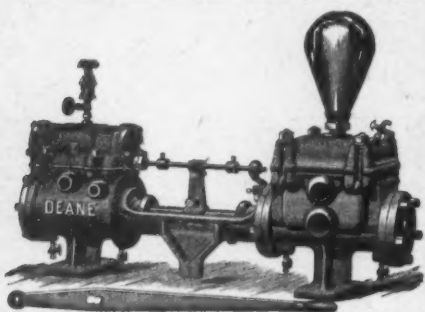
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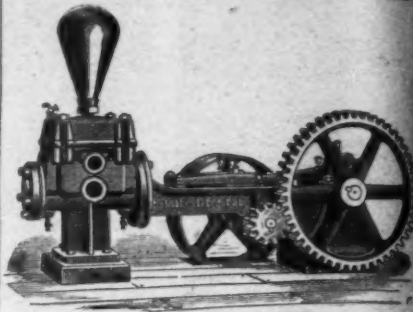
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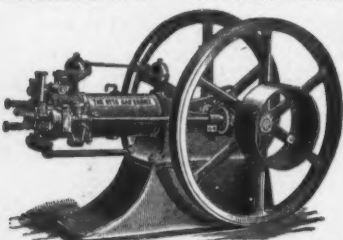
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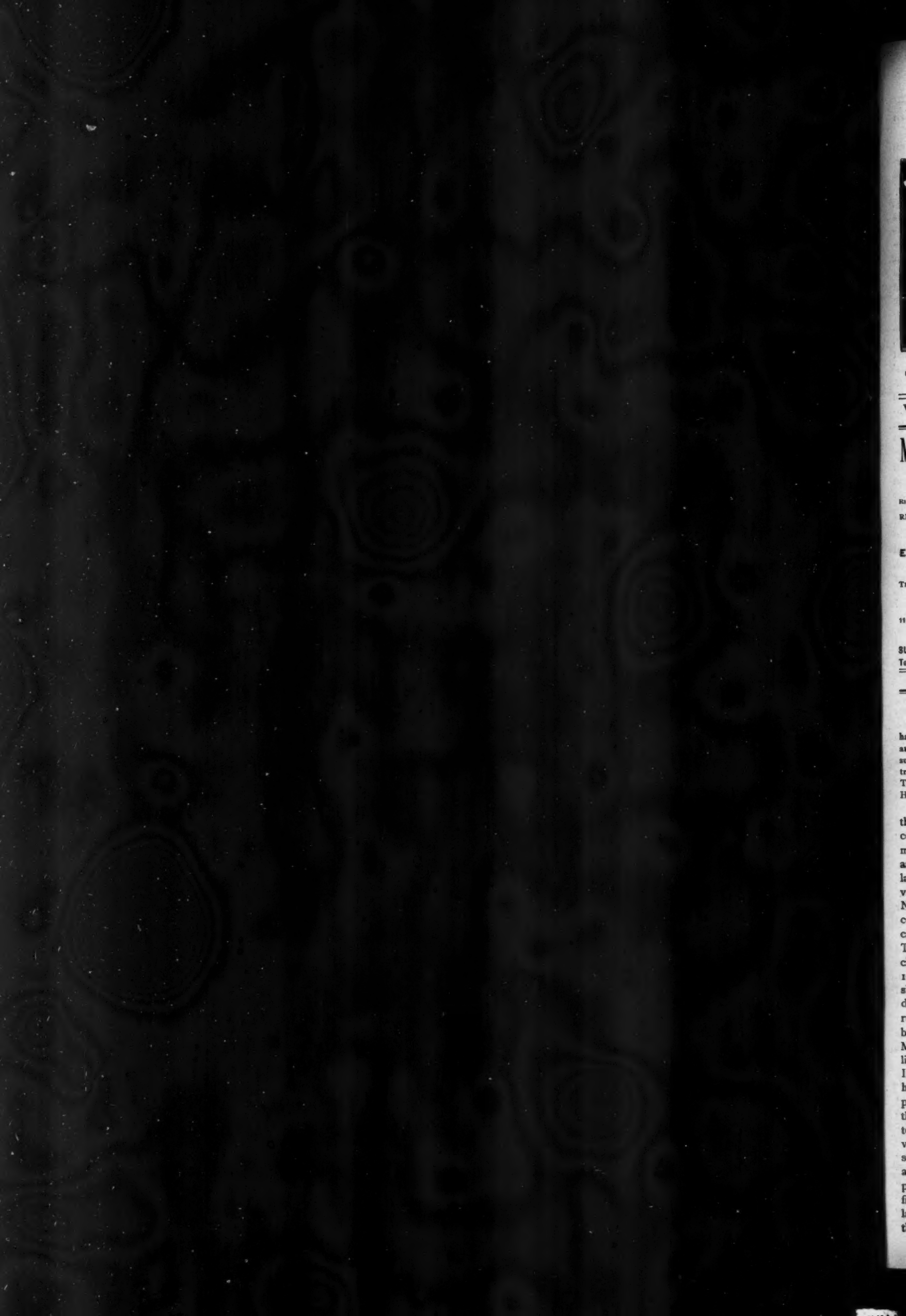
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# MANUFACTURERS' RECORD

A Southern Industrial, Railroad and Financial Newspaper.

VOL. XX. No. 25. }  
WEEKLY.

BALTIMORE, JANUARY 23, 1892.

{ \$4.00 A YEAR.  
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## Manufacturers' Record

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BALTIMORE, JANUARY 23, 1892.

### "True Blue."

The Baltimore MANUFACTURERS' RECORD has refused to accept an advertisement at any price from a town in Rhode Island, as such advertisement was calculated to attract to other locations than in the South. This is practical patriotism.—The Florida Hustler.

The MANUFACTURERS' RECORD thanks the Florida Hustler for its commendation, but the case which it mentions is by no means a rare one, as we have repeatedly during the last few years been urged to sell advertising space to Western and Northwestern towns, but we have constantly refused to do so. In one case the secretary of the Board of Trade of one of the most prosperous cities in the Northwest of nearly 100,000 population kept up a considerable correspondence in his endeavor to induce us to break this rule, and promising very extensive business if we would do so. The MANUFACTURERS' RECORD is published in the interest of the South. It honestly believes that this section has greater advantages and greater possibilities than any other part of the country, and it would be untrue to its chosen work if even in its advertising columns it permitted other sections to use its wide circulation and influence in seeking to attract public attention. Its whole influence, from the first line of editorial to the last line of advertising, is in behalf of the South.

### Postal Savings Banks

The establishment of a system of postal savings depositories is again recommended by Postmaster-General Wanamaker in his annual report. For 25 years petitions have poured in upon the department asking that this be done. Nearly every nation of the world has such a system, and in all it has been of inestimable benefit to the plain people. Among other examples of its value cited in the report is that of Canada, which established the system in 1868. In the first year there were 81 such institutions, with an aggregate balance to the credit of depositors of \$205,000. Now there are 638, with deposits aggregating \$22,000,000.

The cost of management averages annually but one-quarter of one per cent. on the balance due to depositors. The advantages of these institutions to Canada are succinctly given in a letter from the deputy postmaster general of that country in the following terms:

First, to the people personally: (1) Absolute security from loss; (2) convenience of making deposits; (3) repayment not affected by change of residence; (4) safety against personation and fraud; (5) prevention of poverty, or temporary want, by developing habits of thrift and saving; (6) gives, where no other banks exist, a means of ready and safe deposit; (7) discourages reckless and speculative expenditures; (8) educates the young and untrained to a knowledge of the use and management of money.

To the country: (1) The people receive the profits (interest) of their savings when used as a public investment; (2) the country's wealth is kept growing within itself; (3) by the wide distribution of these savings money thus invested can promptly reach points needing it suddenly from local causes; (4) in remote places, stringency from too limited banking facilities is prevented or lessened; (5) the laboring people feel a direct personal interest in the stability of the country; (6) sectionalism among the less intelligent classes is lessened by continual and close touch with a common financial institution; (7) by special investment the people's savings may be made the foundation of securities for financial institutions or loans for municipal improvements or special national undertakings.

Following in the line of the last

paragraph the Postmaster-General suggests that the law should provide that all such deposits should be transferred to the United States Treasury, and that "the Secretary of the Treasury shall keep account of deposits by States, and, to put the money in circulation, shall offer the funds arising in each State as a loan to the national banks of the same State, at a rate of interest to be fixed by him, and these sums shall be declared trust funds and shall be a preferred claim against the assets of the banks."

Such a system would be a blessing to the South, which has very few savings banks, and these only in its large towns. Were it once established its workings would soon be understood, and then its people in its great sparsely-settled areas would, like those of Canada, become habitual depositors, greatly to their own benefit and to the good of their respective States.

THE report of the Iron Age shows 395 furnaces, with an aggregate weekly capacity of 188,082 tons, in blast January 1, as compared with 298 furnaces, with a capacity of 188,135 tons, on December 1, practically no change in the weekly production, and only a slight change in the number of furnaces. The weekly product of all the furnaces on January 1 compared as follows with that of preceding periods:

|                       | Furnaces<br>in blast. | Capacity<br>per week.<br>Gross tons. |
|-----------------------|-----------------------|--------------------------------------|
| January 1, 1892.....  | 395                   | 188,082                              |
| December 1, 1891..... | 298                   | 188,135                              |
| November 1.....       | 304                   | 187,685                              |
| October 1.....        | 306                   | 181,615                              |
| September 1.....      | 299                   | 170,816                              |
| August 1.....         | 296                   | 169,576                              |
| July 1.....           | 291                   | 171,115                              |
| June 1.....           | 258                   | 146,782                              |
| May 1.....            | 227                   | 115,594                              |
| April 1.....          | 228                   | 113,483                              |
| March 1.....          | 257                   | 134,526                              |
| February 1.....       | 294                   | 146,050                              |
| January 1.....        | 304                   | 167,999                              |
| December 1, 1890..... | 340                   | 181,845                              |
| November 1.....       | 344                   | 177,948                              |
| October 1.....        | 336                   | 179,363                              |
| September 1.....      | 323                   | 171,770                              |
| August 1.....         | 334                   | 164,798                              |
| July 1.....           | 336                   | 175,727                              |
| June 1.....           | 345                   | 180,791                              |
| May 1.....            | 344                   | 180,099                              |
| April 1.....          | 344                   | 178,474                              |
| March 1.....          | 343                   | 180,091                              |
| February 1.....       | 334                   | 173,651                              |
| January 1.....        | 333                   | 174,096                              |
| December 1, 1889..... | 328                   | 169,151                              |
| November 1.....       | 323                   | 165,345                              |
| October 1.....        | 311                   | 151,037                              |
| September 1.....      | 294                   | 134,068                              |
| August 1.....         | 286                   | 145,899                              |
| July 1.....           | 285                   | 141,419                              |

### A Suggestion Regarding the Virginia Debt Settlement.

"Why not provide a sinking fund?" The Norfolk Virginian asked this question and said:

By providing a sinking fund Virginia will not only demonstrate her purpose to make good without fear or doubt the payment of the debt, but she would advance her credit to a very high mark and immediately secure the confidence of foreign capital. Indeed, it is not out of the way to predict that such action on the part of the State would do more to secure an influx of foreign capital into our borders to help our railroad development and other great enterprises than any other measure that might be suggested. At the same time such action would secure for those of our people who may have occasion to go to the capitalists of the United Kingdom for investment or for loans a welcome instead of a snub.

This suggestion to the Virginia general assembly has been well received at Richmond, where it has been freely discussed in private by the members of both houses. The Virginian's Richmond correspondent wires the substance of interviews with Lieutenant-Governor Tyler and Mr. John P. Branch, a well-known banker of that city, in which both signify their approval of the suggestion, but the first thinks that "it should be for a mere nominal amount and be distributed over as long a period as possible," while Mr. Branch suggested that this is not "the proper time to make such an appropriation, as the commissioners of the State have put in the bill all the interest that they can afford to spare from other purposes for interest on the bonds. \* \* At some subsequent date, when the revenues of the State will be much larger, then it will be a proper time to set aside a sinking fund." To these suggestions the Virginian responds:

Virginia, it is hoped, will in ten years be rich enough and strong enough to begin to set aside a suitable sum towards a sinking fund, and she should be wise enough now to surprise her creditors by showing her appreciation of the settlement effected by the adoption of such legislation as will secure the prompt payment of accruing interest, and for the creation of a sinking fund of such an amount per annum, which, with its accruing interest, should be



sacredly pledged to the final effacement of the debt.

That the hope expressed in the above paragraph is well founded is proven by the great increase in the assessed value of Virginia property. Last year the increase was about \$40,000,000 in a grand total of \$446,535,438. In 1880 the assessed value was \$301,997,613, and the gain for ten years was about \$104,500,000. This enormous increase has been largely in development investments, such as railroad extensions and equipments, the construction of furnaces, rolling mills and factories of all kinds, the purchase of mineral properties and opening of mines, the construction of docks and ship-yards. All these are worth far more to Virginia than the sum total of their cost. They are so many additional forces that will increase the business, the profits, the solid wealth and the resources of the State. If in the last decade Virginia increased the value of her property by nearly \$105,000,000, it is safe to predict that the assessed value for the last year of this century will be double what it now is.

Should the State determine to commence the next century by setting aside \$50,000 annually, the accumulating principal and interest to be applied to the extinguishment of this bonded debt, in ninety years, at a cost to the State of but \$4,500,000, the end would be accomplished, even if the money of the sinking fund was loaned at but 3 per cent. Surely the Virginian's suggestion is wise and for the best interests of the Commonwealth. The State can "surprise her creditors" \* \* "by the adoption of such legislation as will secure the prompt payment of accruing interest and for the creation of a sinking fund," and by so doing she will inspire a confidence that will redound to her well-being, while at the same time the public debt will cease to be a burden.

ONE of the strong points of the South for diversified manufactures is brought out in a circular issued by the Radford Pipe Works, a Cincinnati company, which owns large pipe works at Anniston, Ala., and Radford, Va. In its circular this company calls attention to the fact that it has to pay no freight on its pig iron, as furnaces are located in the immediate vicinity of its pipe works, thus giving it a great advantage as compared with Northern works. What is true of this company is true of hundreds of other Southern enterprises. The South's advantages for diversified industries are very great, and they will undoubtedly cause a steady increase in every line of manufacturing throughout this section.

THE total production of pig iron in 1891 is estimated by the American Manufacturer at 8,196,127 gross tons, against 9,202,703 tons in 1890, a decrease of over 1,000,000 tons.

### The Signs of the Times.

The North Alabama Improvement Co., of Huntsville, Ala., has sold its entire property to the Northwestern Land Association, an organization composed largely of Dakota capitalists. The property includes the large Huntsville Hotel, an extensive business block, the Monte Sano Hotel and about 1,800 acres of land, the aggregate value being said to be over \$6,000,000, although, of course, the price paid was probably nothing like so large as this. An English syndicate is now negotiating for the property of the New Rome Land Co., at Rome, Ga.; the Crawfish Springs Land Co., which is building a town near Chattanooga, constructing a railroad and opening coal mines, has just raised \$600,000 in New York for prosecuting its work; New England capitalists will probably soon close deals now pending for some very large investments at Chattanooga; the American Association, Limited, of Middlesborough, has raised \$750,000 for continuing its work of development, and the new president has arrived from England to take charge of the company's operations; as announced last week Mr. A. A. Arthur and his associates have organized a \$12,500,000 town and development company to operate in East Tennessee; 85,000 acres of coal, timber and iron land in Virginia and West Virginia have been purchased for development, the price being reported as \$450,000. These are signs of the times. They indicate that money is again coming South for investment, and that the development of the mineral and timber resources of this section is going on more rapidly than ever before. The low price of cotton may depress the business interests dependent upon that State, but the investment of capital in timber and mineral properties by Northern and foreign capitalists is going to be very heavy in 1892.

### Why Some People Complain of Mistakes.

People sometimes blame newspapers when they are not at fault. A prominent machinery house in Birmingham, Ala., under date of January 15, writes to the MANUFACTURERS' RECORD as follows:

We have noticed in your paper recently two accounts of the Texas Coal Fuel Co., Fort Worth, Texas, and letters are signed "L. M. Fouts, Pres.," dated at Fort Worth, and apparently addressed to you. We have addressed several letters to this company, care of L. M. Fouts, and they have all been returned. Can you give us any better information in regard to this organization, and whether Mr. Fouts can be reached at any other point.

If our correspondents will refer to the MANUFACTURERS' RECORD of December 12 and 19, they will see that Mr. Fouts wrote from Weatherford, and not from Fort Worth. Fort Worth is not even mentioned in any part of either letter, and yet we

suppose our Birmingham friends are blaming the MANUFACTURERS' RECORD and thinking it unreliable because of their mistake. They were not content simply to misdirect one letter, but sent several and on different dates.

### Developing the South's Export Trade.

The managers of the Chesapeake & Ohio Railroad propose to issue long-time consolidated bonds sufficient to cover all known future needs of the company and to develop the entire property, double track the road, etc. This will prove of great value to Virginia, and will materially aid in the general development of the whole State, and especially in helping to build up a great through traffic from the West to Europe via Newport News.

The extent of the work which this company is now doing to increase its facilities at Newport News for foreign trade is shown by the following extract from a letter in the Norfolk Virginian:

It is thought that the contracts for building the new Chesapeake & Ohio freight pier and a passenger depot will be awarded to-morrow. The freight pier will be 600 feet long and will cost between \$250,000 and \$300,000. The passenger depot will cost between \$75,000 and \$100,000. In addition to these immense expenditures the company will at an early day build another pier for storing lumber. So large has its freight business been lately that there is a complete glut here now, which several of the general officers are here trying to move.

The Newport News Sun of January 16 also reports that the Chesapeake & Ohio has commenced to lay four additional side-tracks in its yards at that place sufficient to accommodate 1,500 more cars.

At Norfolk the Norfolk & Western Railroad is pushing its terminal facilities with the same vigor and already has contracts out for the erection of machine shops, round-house, etc., and is now receiving bids for a large merchandise shipping pier. With these two great railroads thus vigorously pushing for the development of foreign trade, backed by the natural influences that are aiding them in turning the tide of Western trade to Europe through Southern ports, the South is certain of two great commercial cities on Hampton Roads.

REFERRING to the falling off of business on the Northern Pacific Railroad the Wall Street News says:

The "boom" is out of the Pacific Northwest. The Northern Pacific Co. had last year a large haul of grain Eastward and of building material Westward. Spokane Falls is now built up with new structures which are awaiting occupancy; Tacoma is taking a rest, and Seattle is falling behind-hand. There is little chance of any improvement in that section of the country for the present. The Pacific coast has been overdone for a year at least.

We merely publish this to show our readers that the present dullness in development work is not confined to the South.

### A Chance for Some Southern Port.

The MANUFACTURERS' RECORD commends to its readers the interview of our New York correspondent with Mr. C. W. Wetmore, secretary of the American Steel Barge Co., published in this issue. As we have previously stated, this company has determined to build a large ship-yard at some point on the Atlantic coast. It now has an immense plant at West Superior, and is building another on the Pacific coast. Among the leading stockholders in the company are such capitalists as Messrs. John A. Rockefeller, Colgate Hoyt, Henry Villard and others of that standing. The MANUFACTURERS' RECORD would impress upon Southern ports the great importance of securing this ship-yard, but it is probable that very hard work will be needed in competition with Northern ports, which are endeavoring to capture it. Its location at any Southern port would doubtless have as great influence upon the future of the place selected as the immense ship yard of Mr. C. P. Huntington has had and is destined to have for all time to come upon Newport News. Will Norfolk, Newport News, Port Royal, Savannah, Charleston or any other Southern port prove itself equal to the occasion and capture this prize?

THE New York Journal of Finance, in referring at length to the proposed extension of the Chicago & Rock Island Railroad through Texas to the Gulf, says:

In the end the fact will be found to be that the Rock Island has already quietly laid out its line into Texas. The plan determined upon is to resume work in the Indian Territory—the Rock Island is about half-way across the Territory—and proceed in almost an air line south to Fort Worth. I have authority, which is practically official, for the statement that this extension has been fixed upon. Its importance is not for the Rock Island and Missouri, Kansas & Texas roads alone, however—not by any means; it means much to every system in the Southwest.

MR. C. CHAMBERS, of Velasco, Texas, writes to the MANUFACTURERS' RECORD that in his recent letter to this paper he reported the arrival of a vessel with 800 tons of coal from Baltimore when he should have said Pensacola, the coal having been shipped from Alabama. Mr. Chambers says that he purchased the coal and was so much pleased with it that he chartered the same vessel to bring him another cargo. Thus Alabama has opened up a new market in Texas for its coal.

THE special edition of the Engineering and Mining Journal, of New York, of January 2, was a magnificent piece of journalistic work, covering the mineral interests of the whole world. It was a credit to American journalism. This special number has now been bound in book form under the title of "Mineral Statistics for 1891." It is invaluable to all in any way interested in minerals.



### An Inner Waterway from New York to Florida.

The New York Board of Trade at its annual meeting last week adopted a resolution urging Congress to include in the river and harbor bill an appropriation of \$25,000 to be expended by a commission to be appointed by the governors of New York, New Jersey and Pennsylvania for the making of a preliminary survey for a ship canal between New York harbor and Delaware and Chesapeake bays.

The general details of this scheme were stated by Professor Lewis M. Haupt, of the University of Pennsylvania, who, with a number of Philadelphians, attended the meeting. He said in part:

The opening of a 20-foot channel across New Jersey would treble the shore line south from New York to South Carolina and bring into much closer commercial relations the most populous productive sections of the intervening seaboard States. It would reduce the price of fuel, building materials and manufactured articles in all sections connected with these waters, but especially in New York, where it is estimated \$3,000,000 would be saved on fuel alone. The commerce of the Delaware is greater than that of the Hudson by nearly 2,000,000 tons, and the canal would enable it to reach the harbor of New York in much less time and at less cost and risk, with consequent lower rates for insurance, than by the Capes of the Delaware. The plan provides for a channel 33 miles long, which is 11 miles shorter than the Delaware & Raritan. There would be three locks on either side of the summit level, which would be 50 feet above tide. The cross section is estimated to be 90 feet at bottom, 150 feet at the surface and 20 feet deep, with locks 500 by 60 feet. The total distance would be about 90 miles from New York to Philadelphia, thus connecting by the cheapest known method of communication the most populous centers of the United States at an estimated cost for the entire line of \$12,500,000.

The completion of the proposed canal would be a long step towards the final consummation of the plan originally suggested by Robert Fulton for the creation of an inner waterway from New York to Florida. Many links have been constructed of the chain of ship canals he proposed for connecting the bays and sounds of the Atlantic coast and forming a continuous system of safely navigable waters and harbors of refuge from storms or from enemies in time of war.

While the proposed canal would be of more immediate benefit to New York and Philadelphia than to the coast cities further South, yet, as an important division of the greater scheme, it ought to be looked upon as a national enterprise, and as such receive due consideration. But whether or no it is entitled to the aid of the national government at this time is another matter. The Albemarle & Chesapeake Canal, which connects the North Carolina sounds with tidewater in Virginia, was built many years since at the cost of those two States. It has served the purpose of its builders well, but to make it such a canal as Fulton's plan con-

templated it would have to be widened and deepened, and its course, in some places exceedingly tortuous, straightened. This would cost a great deal of money, which would, of course, be furnished by the general government, if eventually it should be determined to construct this system of behind-the-coast waterways. Should the government ever enter upon this great work for the national defence, and for the protection of American commerce, it would probably be found necessary to build the canal that the New York and Philadelphia merchants have under consideration. Meanwhile, if the people of the populous and wealthy States of New York, New Jersey and Pennsylvania, or the merchants of New York and Philadelphia, believe this canal to be an immediate necessity, let them follow the example set by Virginia and North Carolina, and build it at their own cost. If they are unwilling for any reason to do this, then let them take measures to unite all the Atlantic seaboard States in favor of the great public work outlined by Fulton, but enlarged to meet the present and prospective requirements of American commerce.

Congress has never failed to respond favorably to requests from States for the services of army engineer officers, and would unquestionably consent to have some of the corps detailed to make this preliminary survey. But it is unseemly, to say the least, for those three States to ask that body for the pitiful sum of \$25,000, to be expended by their own commissioners in ascertaining whether the scheme they propose is practicable. New York and Philadelphia merchants, if they wish the survey made by a board of interstate commissioners, ought to pay all expenses.

THE Radford (Va.) Pipe Works, Radford, Va., has made a contract to furnish the city of Baltimore with \$52,000 worth of water pipe made at its new works just completed. Thus one new enterprise after another is starting up in the South, and out of the hitherto unused raw materials of that section wealth is being created.

THE Jacksonville (Fla.) Standard states that a regular steamship line will be established between that city and Liverpool, for the purpose of shipping oranges direct to England. It is believed that an extensive business can be developed—a very reasonable view of the matter, considering the superiority of Florida to Mediterranean oranges.

THE two large charcoal furnaces at Grand Rivers, Ky., just completed, have gone into blast. They were built by Boston capitalists, and the entire plant is said to be one of the most complete in the country. Their aggregate daily capacity is from 150 to 200 tons.

### The Precious Stones of North Carolina.

The precious and rare stones of North Carolina, although constituting but a moiety of that State's mineral wealth, have been unearthed in such variety and under such conditions as to lead to the belief in the minds of many that sooner or later they will be found in abundance in nature's as yet hidden storehouse. Speaking of this recently, one who witnessed the scene told the following story, which the MANUFACTURERS' RECORD thinks worth publishing:

In the autumn of 1882 the Richmond & Danville Railroad Co. detailed Maj. C. C. McPhail to make, at a Boston exposition, a display of the resources of the territory traversed by that line and its feeders. A splendid exhibition that attracted thousands of visitors was the result. Among these one day was a cultivated, sweet-faced and venerable gentleman of the best Puritan stock who had been induced by her son to go with him to see the wondrous resources of the Piedmont South. Major McPhail has the courteous dignity of a Virginia gentleman of the old regime, the practical training and experience of this age of progress, and is a keen observer and an excellent judge of human nature. He paid especial attention to the venerable matron, and delighted her by his lucid explanations. Finally, after taking a number of specimens from his showcases and arranging them on the tables before her, he said interrogatively: "You are familiar, madame, with St. John's description in the Book of Revelation of the precious stones of that great city, the holy Jerusalem?"

"Yes, indeed," was her reply. "Permit me, then, to show them to you in their order," he said. "These are not polished, as St. John saw them in his vision, but they are all here and were found in Western North Carolina. The first foundation was jasper. This is it. 'The second, sapphire; the third, a chalcidony; the fourth, an emerald; the fifth, sardonyx; the sixth, sardius; the seventh, chrysolite; the eighth, beryl; the ninth, a topaz; the tenth, a chrysoprassus; the eleventh, a jacinth; the twelfth, an amethyst.'"

As the speaker named them he handed each stone in turn to his interested visitor, and when she had seen them all he said: "Now, madam, you can have some faint idea of the glories that will be one day revealed to you."

"Oh," said the dear old lady, as she clasped her hands, while joy sparkled in her venerable eyes. "Often and often I have tried to imagine how that wall would look as I neared the pearly gates, but I never expected to see the stones of that heavenly foundation with these mortal eyes. I thank God that He has given me this privilege, and I thank you, too, for your kindness."

THE Clifton Forge Woolen Mills, of Clifton Forge, Va., sold last week to the Fries Breslin Co., of Camden, N. J., 50,000 pounds of yarns for use in the manufacture of smyrna rugs.

THE Richmond State says that the Chesapeake & Ohio Railroad will spend at least \$3,000,000 in improvements in and around Richmond and Newport News this year.

**If you are not already a subscriber to the MANUFACTURERS' RECORD, send us \$4 and you will receive it regularly for one year, or six months for \$2.00.**

### THE COTTON QUESTION.

Mr. Edward Atkinson Discusses Overproduction of Cotton.

Boston, January 15, 1893.

Editor *Manufacturers' Record*:

In reply to your request of January 13th, asking me to give my views in regard to the proposed reduction of the cotton area, I will venture to reply in my usual very frank manner, stating the exact facts as they appear to an outside observer and economic student.

I have from time to time ventured to criticize in the most severe terms the whole method of treating the cotton fibre from the time it is gathered on the field until it is delivered in the storehouse of the factory, where it first begins to be treated decently. From this storehouse it passes to the opening room of the factory, where a great deal of work is of necessity applied to each bale in order to undo the mischief which has been caused by the barbarous treatment to which it has been previously subjected. All these faults have been imputed to the packing of cotton very many times, and the rejoinder has been conclusive. This reply has been given in this form:

"It does not pay the grower to handle the cotton, to bale it, or to treat it any better in ginning, baling, handling, compressing and shipping, and therefore it will not be done." Hence the manufacturers have accepted the situation, and the price of the cotton is established according to what it is worth *net*, deducting from what it would be worth if decently treated every element of depreciation—for the heavy bagging, the heavy hoops, the mud, the dirt, the pickage and stealage, and all the other faults. Unbeknownst-like the cost of all this damage and barbarous treatment has always gone back from the spinner to the farmer and planter who produced the cotton. None of this waste is paid for by the consumer. He knows exactly what the waste is. He knows exactly what the cotton is worth to him in its clean condition, deducting tare and damage, pickage and stealage; he pays that net sum and no more. The cotton grower bears the whole cost of the bad treatment of the cotton.

You may remember that in treating this subject two or three years ago in your columns, I stated that the only remedy for this barbarous treatment would come when the crop got beyond the demand, so that the rubbish would either be sold at less than cost or left upon the hand of the grower. Now you will remark that, year by year, since this huge increase in the product, measured by bales, the disparity in the price of good cotton as compared to poor cotton has become greater, until the "dog-tail" has become practically unsalable. That fact brings the true remedy within sight.

You state that "the price is probably below the actual cost of production in many cases." What does it cost to produce a pound of cotton? Neither you nor anyone else can answer that question. I put that question once to one of my oldest friends in Augusta. He replied in Yankee fashion as follows: "The son of one of my oldest friends is fitting for college. He hasn't much money, and while he has been preparing himself this last year, he made four bales of cotton. What did it cost?"

If I am rightly informed, a larger and larger part of the cotton crop is being produced somewhat in this way. The grower is devoting himself more and more to food crops and the other elements necessary to existence, dealing with this cotton crop as a crop from which he will get some cash. What does his crop of cotton cost him? The true question is, what will it bring? How much cash will he get?

Now, if that grower is a shiftless and unintelligent person, loaded with debt a year ahead, and under the necessity of



putting a lien upon his crop in order to get his supplies, he is then subjected to the payment for his supplies of about 100 per cent. advance on the cost. If I am rightly informed, the storekeeper or the factor who makes the advance looks less to the price of the cotton which he is to receive than he does to this hundred per cent profit on what he sells. Until a recent period it did not matter very greatly to the storekeeper whether he received from the grower an average of low-middling cotton or an average of low ordinary, so long as he got a certain number of bales in liquidation of the account for a certain quantity of goods at double prices. He could well afford to discount a cent a pound on the quality. But now what may happen? If the quantity of well-handled, well-packed cotton, low middling and upwards, will suffice to meet the ordinary demand of the world, then the dog-tail and the low ordinary trash, badly handled and badly ginned, may become so unsalable that the shopkeeper or factor cannot afford to make advances. Then what? The crop will be diminished at the dog-tail end, and that is the right place to cut it off. That will be a just and righteous method of diminishing the cotton crop, and there is no other way by which it can be diminished.

The conventions may pass as many resolutions as they like, the members who grow good cotton will go home and plant just enough more on their own farms or plantations to make up for the expected deficiency elsewhere, which will be due to the general cut down by 20 per cent. which has been recommended by the convention. Do not such resolutions only promote a wider planting? The men who grow extra staple either in length or fineness, other than Sea Island, may soon take pains to keep it separate and to keep it from being impaired by the neighborhood of other kinds or varieties; they may then get a good price for a uniform quality of extra staple cotton. Whereas, as the extra staple is now grown, infested with the shorter staple, it is neither one thing nor another, and when it gets into a factory it plays the mischief with all the work and makes spinners use swear words.

I am therefore not without hope that the remedy for the barbarous treatment of cotton has developed itself in the excessive crops of badly-handled, badly-ginned, badly-packed and badly-treated American bales, representing the very worst example of a most important staple reduced in its true value by about 20 per cent. at the minimum, and from that to 50 per cent. on its way from the field to the factory, at the sole cost of the planters and farmers.

If you can put this screed into any plainer words, more to the point, I should be glad to have you correct the proofs, and I will adopt your better form if I have failed to express myself in a perfectly clear manner.

EDWARD ATKINSON.

### A New Coffee Huller.

[Special Cor. MANUFACTURERS' RECORD.]

WINSTON-SALEM, N. C., Jan. 16, 1892.

Mr. C. A. Hege, of the Salem Iron Works, showed me the other day a new coffee huller which he has recently patented, and which he will manufacture for the South American trade. The new huller is expected to revolutionize the handling and marketing of coffee, as it will shell with 5 horse-power from 150 to 200 bushels daily—many times the amount of work obtained from present primitive processes. The principle of the huller is the rapid revolution of a series of steel brushes in a polygon-shaped cylinder, and so perfectly is the work done that every particle of the hull and parchment coating of the berry is removed and yet the berry remains entirely intact. Associated in the enterprise with Mr. Hege are Messrs. W. H. B. Stout, of Lincoln, Neb.; C. J. Hall, of Belfast, Me., and Walter C. Riotte, of Costa Rica, S. A.

A. P.

## AN OPPORTUNITY FOR THE SOUTH.

### The Evolution of the "Whaleback." Looking for a Location—Several Southern Ports Suggested.

Economy in First Cost and in Administration—The Transportation Problem—Coal and Iron Ore.

[Special Cor. MANUFACTURERS' RECORD.]

NEW YORK, January 12, 1892.

The magical rise and progress of the "whaleback" type of steamships, and its now demonstrated practicability for lake and ocean freightage, constitute one of the latter day wonders of the world. Scarcely more than two years ago the whaleback was looked upon as a nautical absurdity, and its usefulness ridiculed as a phantom notion of a disordered imagination. To-day it commands the admiration of the commercial world. From the "Zenith City of the Unsalted Seas" there shot out on its way across the lakes this unique type of carrying vessel, through the Welland canal, with only six inches to spare, into the rapids of the St. Lawrence, out of that noble river, on across the Atlantic, and in due time arrived at Liverpool with a smile that struck consternation into the heart of the greatest ship-building nation on earth. Back she came, and with a cargo of miscellaneous machinery away she goes for the new Northwest via the Straits of Magellan, and in due time arrives safely at her destination. And all this is done with as little fuss and flourish as one ordinarily encounters on a ferry voyage from New York to Jersey City.

Such a performance could not fail to attract universal attention, and now that the astonishment is subsiding people are beginning seriously to discuss the whaleback in its relation to the carrying trade of the world—to regard it from the dollars and cents point of view. And I have been led to a consideration of the subject because there is involved in it a matter of vital interest to the South.

#### THE PARTIES INTERESTED.

The whaleback is the invention of Capt. Alexander McDougall. The business of building and running whalebacks is carried on by the American Steel Barge Co., of New York city. The capital of the company is \$4,000,000. Colgate Hoyt is president and treasurer. Mr. Hoyt is a director of the Northern Pacific Railroad. Joseph L. Colby is vice-president; Charles W. Wetmore is secretary. Mr. Wetmore is a Harvard graduate, class of '75; of the Harvard Law School, class of '77, and a lawyer of high standing at the New York bar. Capt. Alex. McDougall, the inventor, is the general manager of the company. Among the stockholders are John D. Rockefeller, president of the Standard Oil Co.; Chas. L. Colby, formerly president of the Wisconsin Central Railroad; J. B. Colgate, banker; the estate of J. B. Trevor; Samuel Mather and Capt. Thomas Wilson, capitalists, of Cleveland, Ohio; A. D. Thompson, of Duluth, and Henry Villard.

I give these names for the purpose of showing the class of men who have demonstrated their faith in the whaleback idea by putting their money into the enterprise.

The company's plant is at West Superior, Wis., just across the bay from Duluth. To secure this plant the enterprising people of West Superior made a handsome donation of land and cash. The former included nearly one-half mile of water-front, containing room sufficient for the construction of eleven ships at the same time and enough besides for a dry-dock. Here 20 of the 22 steamers and barges of the present whaleback fleet have been built. Three steamers and one barge for outsiders and four steamers and four barges for the company itself are now in course of construction and will be ready for use in the spring.

Thus a plant to supply the demands of the lake traffic is successfully established. The unbounded faith of the company's managers in the practicability of the whaleback for the Pacific coast carrying trade has led them to establish a branch—the Pacific Steel Barge Works—at the new town of Everett, Wash. The call for the whaleback for use on the Atlantic is already loud, and that means the necessity of building a plant somewhere on this coast. It is essential that such a plant be located either where steel plates are made or where freights would not be excessive. Here is

#### THE SOUTH'S OPPORTUNITY.

Baltimore, Norfolk, Newport News, Charleston, Savannah, Port Royal, Brunswick, Mobile—all available points. Already the company is in receipt of overtures from Norfolk, from a point on the Potomac, from a point on the Delaware and from parties in Brooklyn. Of the relative advantages of the points mentioned MANUFACTURERS' RECORD readers are doubtless better able to judge than I am. But the importance to the South in securing a ship-building plant of the character involved cannot be overestimated. The demand for the whaleback type of steamer and barge is bound to be unprecedented. Its general introduction into the carrying trade means vastly more than merely the building of ships. It means the establishment of transportation lines at reduced freight rates. It means Texan Bessemer ore for Alabama furnaces via Galveston and Mobile. The same gentlemen who are interested in the American Steel Barge Co. are also interested in the Spanish-American Iron Co., an organization that is now preparing to ship a high-grade Bessemer ore from Daiquiri Bay, Cuba, to the United States. It means the transportation of Alabama coal to Texas and the West Indies. It means the establishment of a steel plate mill wherever the ship-building plant is located. This has been accomplished at West Superior, and soon will be at Everett.

#### POINTS OF ADVANTAGE.

A consideration of the whaleback shows many points of advantage. Experience in the lake trade has demonstrated that, given a certain number of tons to be carried at a certain speed, and taking prices as they have ruled for the past three or four years, the cost of the whaleback is from 30 to 50 per cent. less than that of the ordinary lake carriers. When in London last summer, Mr. Wetmore was told by one of the most responsible of English ship-builders that the whaleback could be built for about 30 per cent. less than the present cost of the cheapest class of English tramp steamship.

In the cost of running a whaleback there is also great saving. A steamer like the Wetmore, for example, carries a crew of about 17 or 18 men. A ship of the ordinary type of the same capacity requires 35 men. From 30 to 35 per cent. less power is required to drive a whaleback a given speed and carrying a given cargo. And further, owing to the extreme simplicity in construction, there is less deterioration from wear and tear. Another striking characteristic of these ships is their light draft as compared with ships of the ordinary type, thus offering an opening to commerce many important Southern ports not now accessible to large ships with full cargo.

For the main points in this article I am indebted to Mr. C. W. Wetmore, the courteous secretary of the American Steel Barge Co., 36 Wall street, New York, and attention is called to them because of the vital importance they seem to possess to the South. The situation affords an opportunity not only for securing a great ship-building plant, with its allied industries, but it suggests the application of a form of transportation between Southern ports and desirable foreign points that high cost now makes unprofitable or impracticable.

F. W. R.

## FLORIDA PHOSPHATE INDUSTRY.

### Sharp Criticism of Existing Methods and Conditions.

The Great Future of the Industry When Speculators Have Been Weeded Out.

Editor Manufacturers' Record:

The discovery of phosphates in Florida, followed by the rapid practical development of this important industry in that section of country, has, not unnaturally, attracted the attention of capitalists and others from different quarters of the globe.

Bone phosphate of lime contained in this phosphatic mineral is to the soil what food is to mankind.

The bones of the cow contain 55. of the horse 67, and of the sheep 70 per cent. of phosphate of lime, and as this material is derived from the food on which the animals live, it is indispensable that it be present in the soil in which the vegetables grow. Florida phosphate contains from 50 to over 80 per cent. of bone phosphate of lime, and when it is considered that bone dust and other manures that yield phosphate of lime are very expensive, and the supply inadequate to keep pace with the growing increase in consumption, it is clearly evident that phosphate rock is destined to take important rank in the commerce of nations.

The farmer who neglects, or through lack of knowledge omits, to replenish the soil with phosphate, will have poor, degenerate crops of inferior quality. The supply of phosphate must be kept up and the soil continuously replenished if we expect to maintain an abundant supply of the earth's products, to the volume and value of which the prosperity of a nation bears a direct ratio. The natural presence in the soil of this important factor in the growth of cereals is of universally meagre proportions, and this is regarded by scientists as the weak link in the chain of fertility.

It might be presumed that opportune discoveries of this valuable product in a new field, and in such a high-grade form, should excite speculation, and it is of this feature, and its effects upon the legitimate trading in this commodity, that this article is intended to treat, in the light of authoritative and undisputed facts gleaned in a rigorous investigation of the subject conducted in Florida and in Europe for the guidance of those interested in this important branch of commerce.

Stacks of literature on the subject culled from press issues, periodicals, pamphlets, etc., were placed in my hands for perusal, and thus commenced my investigation. I spent my first day on board an Atlantic Coast Line train, endeavoring by all the rules that govern the application of figures to discover how various sum totals respecting profits were arrived at by writers picturing in glowing terms unprecedented opportunities of making untold wealth in one year. I was cold and philosophic, bent on a mission in search of truth, so that fiction and millions had no effect on my nerves. With a desire to cut myself, not "in halves," but away from absorbing study, however, and in an effort to ascertain what became of the other half, I turned to my companion in travel, who, to my surprise, drifted almost immediately on to the subject of Florida phosphates. I listened attentively and noted many points of interest touching upon the subject of profits until, to my horror, he arrived at the cutting-in-half point, when I excused myself and retired to the smoking section and lighted a cigar. Here again the subject of Florida phosphates was under discussion.

Nestling in a corner I quietly listened to a conversation and recorded items which did not strike me as being dealt with in my bundle of papers. Instances of subse-



quent interviews and encounters with Florida crackers, landowners, speculators and unscrupulous lawyers, fanatics, doctors, analytical chemists, experts, option hunters, clerks of courts, merchants, brokers, company promoters, prospectors, etc., I could multiply without limit, but I forbear from citing the different traits of character prominently brought to the surface by a varied experience among them. Suffice it that with little difficulty I found speculation rampant, values and estimates of quantities erroneous. The domestic and European market was being flooded with letters, pamphlets and press articles published even in many instances by authoritative journals under misapprehension of the true status of affairs. These productions have invariably emanated from parties holding options or otherwise interested in the sale of properties, and here it may be stated that every owner of a potato patch considered it a holy duty to himself and his family to give an option on his land to speculators, who in turn described it as phosphate land, and particulars were circulated in glowing terms throughout the entire country and in Europe. This brought the English concession hunter from his hole, and inspired a number of commission brokers who had never hitherto dealt in phosphate rock to grasp the golden opportunity of securing the European agencies for new companies which meanwhile were being formed on paper with wonderful prolificness, it being considered an easier task to sell shares to Northern and foreign capitalists than to dispose of a property.

These brokers, assuming a knowledge of the business which they did not possess, influenced the minds of local owners of land and stimulated active digging operations throughout the State. Groups of men with good intentions have to my knowledge expended their all and given their time unstintedly to the work of mining, formed themselves into syndicates and commenced operations in an improvised manner in the hope that they would sell out at a large figure and realize immense profits; whereas, after excavating the rock near the surface it has been discovered that capital alone would enable them to continue, and as neither this nor proper facilities were now available, impending ruin stared them squarely in the face. Speaking with many of this class it was clearly evident that every trace of hopeful anticipation of large profits was replaced by a remarkable evidence of anxiety to sell the rock already mined.

Follow out the consequence logically in your mind, and what do you find? European agents of the type already alluded to, being unable to secure contracts from buyers at prices equal to those obtainable through the long-established channels of trade, are successful in booking contracts only by virtue of underselling. This they have been enabled to do by ample opportunity to buy in small lots from those petty miners who, being utterly ignorant of the business they have undertaken, and being sickened by results and in need of money, sell at prices to suit those obtained by the brokers in Europe. These scratch shipments, as they may be called, I have carefully and critically examined for purposes of comparison with those passing from the leading companies. They are composed principally of surface rocks, unscaled and uncleaned, damp, dirty and uncalcined, and cannot fail to fall short of giving satisfaction to buyers. I have no hesitation in stating that in point of economy the manufacturers would save by buying their supplies of rock through the responsible agents of well-established companies. Meanwhile the legitimate miner, responsible agent and the manufacturer are all behind a cloud, while the whole range is open to the wild and reckless trading of a number of so-called brokers floundering around in frantic efforts to establish a busi-

ness, aided by the small miner, whose condition I have described, and who, as a class, are narrowing in numbers, much to the satisfaction of the trade generally, but to the dismay of these brokers, who are primarily to blame for the present demoralized condition of the market.

Just how long this will last it is difficult to determine, but for high-grade rock shipments to European ports a higher range of prices per unit than that at present prevailing may be looked for in the near future. The quantity of high-grade rock of uniform excellent quality is not present in large quantities, and the really valuable properties of this class are held by well-established companies, who, by careful management, can obtain the price it ought to bring.

No company should rush madly into contracts for supply of rock because of a fixed offer for future deliveries. Allow the class of brokers who are responsible for demoralizing the market to make such contracts, and fail, as they inevitably will, to carry them out. My investigations in Europe disclosed a contract for delivery of rock at 9½¢ per unit. Following this up closely, I ascertained that freight was engaged at 23¢, and rock was bought in small piles from different sections wet, and uncleaned, at \$6 per ton.

These figures are authoritative and interesting evidence of blundering and reckless trading:

|  |         |
|--|---------|
| Rock, per ton, on spot .....               | \$ 6 00 |
| Railroad freight and loading .....         | 2 50    |
| Ocean freight, estimated at 23¢ .....      | 5 53    |
| Commission, interest and trade discount .. | 90      |

Total .....

This is a close estimate, allowing for no incidental expenditures. At \$4.81 this represents in English money £3 2s., while 75 per cent. rock, at 9½¢ per unit, amounts to £2 17s. 9½¢, or an actual shrinkage of 4s. 2½¢, representing a loss too heavy for any business house to repeat very often. Such miscalculation by the inexperienced means a serious temporary drawback to those engaged in the business and possessing an intelligent idea of its details.

Exhaustive research among miners of phosphate rock establishes the cost of mining, handling and loading at about \$6 per ton. In confirmation of this minute details have been furnished in confidence by many reliable sources.

It is self-evident from the foregoing that prices must improve; but in rendering an allegiance to the primary laws and principles which regulate commerce, we must not be understood to mean that time and circumstances alone will adjust anomalies created by foolish traders.

Much essentially depends upon systematic and intelligent measures of protection, the direction of which should be assumed by the responsible companies.

The Gulf coast or pebble phosphate companies engaged in excavating a matrix from which, by a process of washing and drying, a considerable portion of coprolites are obtained, are not interested in this discussion, inasmuch as this form of phosphate is principally used in domestic markets and rather competes in price with South Carolina. The South Carolina companies, by a recent drop in prices, evidently mean a warning to Florida pebble miners, and it will undoubtedly have the tendency to deter the erection of more plants, which would mean overproduction, collapse and survival of the fittest.

An effort has been made to bring together all of the phosphate miners in Florida, but at a convention held in Ocala on November 20 the leading phosphate men were conspicuous by their absence. A committee was appointed by the chairman of this convention. This committee now confidentially submits to the phosphate companies articles of agreement for the formation of a general phosphate association. Success in this direction is desirable,

but as none of the leading companies are represented, there being no trace of the well-known operators being identified with it, while those submitted are obscure, it is more likely to prove abortive than otherwise. I have a strong suspicion that it is more in the interests of a few obscure individuals than the general good of the trade.

The meeting to be held in Ocala, January 20, if attended by prominent men, such as Brady, Inglis, Cameron, Dunn, Chisholm, Shepard, Baldwin, Sinclair et al., may possibly resolve itself into tangible shape. No organization can effect much practical good with the interests these gentlemen represent left out.

There is a great future for this business, and with a really good property, ample working capital, knowledge of the business, and good practical and administrative management, wealth will be undoubtedly accumulated. As far as investing is concerned, capitalists are strongly advised to leave speculators and boomers alone and invest in some well-established company, first ascertaining if the property is valuable, the equipment and plant efficient and adapted to economical handling, and management skillful and competent. As a further safeguard, and to make "assurance doubly sure," ascertain the stamp and standing of those gentlemen already interested.

I would consider any series of observations on this subject as incomplete which did not include a few remarks on the question of transportation. The discovery of this valuable deposit in Florida has suddenly elevated her from the level of a mere orange and agricultural State and popular sanitarium to an exalted prominence in the commercial world, but to sustain this position she must foster and vigilantly guard the capital entering her borders.

A volume might be filled with the details of numberless instances of gross mismanagement and total indifference to the public rights on the part of the railroad companies. Nothing could be more ludicrous to an efficient railroad official than the manner some of the Florida railroads are managed. Until this is remedied advancement must be slow, as capital will shrink from depending on such ill-conducted roads as an outlet.

January 16, 1892.

D. A. G.

### New Malleable Iron Works in Baltimore.

The Malleable Iron & Steel Casting Co., of Baltimore, the incorporation of which was announced in the MANUFACTURERS' RECORD a week ago, is composed of men of long practical experience in this line of work. The members of the company are: P. Kennedy, proprietor of the Federal Hill Foundry, of this city; Michael Flynn, of Philadelphia, who for a number of years was connected with Messrs. Stanley G. Flagg & Co., of that city, extensive manufacturers of malleable iron and steel castings, and Thomas F. Coady, C. P. Jennings and Thomas Flynn, practical iron molders. A lot of ground, fronting 120 feet on Charles street and running back to a depth of 334 feet on Wells street, which is on the line of the Baltimore & Ohio Railroad, has been purchased and arrangements perfected for the immediate erection thereon of two brick structures 50x100 feet and 40x100 feet, respectively. The larger building will be fully equipped with a large melting furnace and cupola, and have 50 iron benches for moulders. The other building will be used for office, pattern and assorting rooms, cleaning or tumbling rooms, annealing room, etc., and engine and boiler room. There has been a great need of malleable iron works in Baltimore to meet the local demand, as well as the demand from the South, and this new enterprise should meet with much success.

### A REMARKABLE COUNTY.

The Great Resources of Norfolk County, Va.—The Dismal Swamp and Its Canals.

NORFOLK, VA., January 13, 1892.

Editor *Manufacturers' Record*:

During the last few years much has been said and written about Norfolk, Va., and but very little has been said about the surrounding country. A few facts in regard to the county of Norfolk will help the readers of the MANUFACTURERS' RECORD to better understand the resources of this portion of the State.

Norfolk county was formed in 1691. It is 32 miles long from north to south, and has a mean average width of 17 miles from east to west. Its northern boundary is the Chesapeake bay, its southern the State of North Carolina, its eastern the county of Princess Anne, its western Hampton Roads and Nansemond county. It is in the southeastern part of the State, only one county being located between it and the Atlantic ocean.

The county has more valuable water frontage, in a commercial point of view, than all the balance of the State of Virginia combined. This is owing to its fine position with respect to "Hampton Roads," which is conceded to be the finest and best harbor in the world.

The county is so cut up by the "arms of the sea," such as the eastern, western and southern branches of the Elizabeth river, Tanners' and Masons' creeks and other smaller tributaries of the sea, that there is no farm in the county of Norfolk more than 3 miles from navigable water.

Then again the county is supplied with two canals, the Dismal Swamp canal, passing through the eastern portion of that great swamp, and the Chesapeake and Albemarle canal, both of which pass southward and connect the waters of this harbor with the North Carolina sounds, Currituck, Pamlico and Albemarle, and all their hundreds of navigable tributaries.

Most of the farm products, as well as the wood and lumber, can be floated from the Norfolk county farms to this seaport. In addition to this splendid water system of transportation, 9 railroads traverse the county from all points of the compass on their way to their deep-water terminal in Norfolk harbor. As these roads pass out from this city into the magnificent trucking belt surrounding this city, numerous way stations and sidings have been established, so that the trucker has his choice of transportation from the farm to the city. He can send his produce in by rail, by water or by wagon over the finest shell turnpikes in the entire United States. In other words, the Norfolk county farmer is favored by wind, by steam and by horsepower in the matter of moving his immense crops to market. And, judging by the number of charters applied for at this session of the State legislature, he will soon be able to send in his produce by electricity, as at least half dozen electric roads are foreshadowed by the applications for charters.

Nine shell roads also traverse Norfolk county in all directions. These roads are turnpiked up and covered with oyster shells, which soon become thoroughly pulverized by the action of hoof and wheel and make the finest roads known.

When the Norfolk county farmer's produce reaches this harbor his transportation advantages have not ended by any means, as he can ship by steamer or by railroad (the healthiest competition in the world) to all the great markets, such as New York, Philadelphia, Providence, Boston, Baltimore, Washington, etc.

All of Norfolk county excepting that portion occupied by the "Great Dismal Swamp" is tillable when cleared, and even the swamp land is all tillable when cleared.



and drained. Not more than one-third of the land in the county is under cultivation. The soil is either a clay loam on clay sub-soil or a sandy loam on clay. The latter is the trucking land and the former the grass, grain and corn land.

The county is well drained by the many rivers or streams that penetrate the land in every direction. These streams are all "tidal streams"—that is to say, the tide backs or runs up into all of them to their very sources. From "mean high" to "mean low" tide is about 30 inches.

The "Great Dismal Swamp" comprises about 450 square miles of territory. It is a singular formation. It is practically a swamp on a side hill. At least five streams rise in this swamp and flow away to all points except to the westward. In the middle of the swamp, and at its highest point, is Lake Drummond, a body of water covering several square miles of territory. This lake is 27 feet (in round numbers) above the waters of this harbor. A modern steam dredge working its way up any of the streams issuing from this swamp would drain Lake Drummond, as the waters would run out as out of a mill race.

The soil of the swamp is of a vegetable or peaty nature. In dry seasons it burns up to the depth of several feet, burning until heavy rains extinguish the fire or until it eats its way down to the water level. Indian tradition says that it was in this way that Lake Drummond was formed. The bed of the lake during an unusually dry period was literally burned out to the depth of 6 to 10 feet, and when the usual rainfall saturated the soil of the swamp again this burned-out bed became filled with water, making the most unique and original lake-bed in the world.

The swamp is thickly set with cypress and juniper, both valuable varieties of timber. The juniper roots by the thousands of cords are soaking in the waters of the swamp from year to year, and the juniper berries annually fall off into the water, strongly impregnating it with the virtues of the juniper, and making the water of the color of cold tea or vinegar, and giving it medicinal virtues, for which it is sought after quite extensively.

The swamp proper is free from all malarial influences and mosquitoes, and is a favorite resort for many people, who, going there with rod and gun, fish and hunt, sleeping on juniper boughs and drinking juniper water for a few weeks and come out thoroughly renewed.

Washington in his day knew more of the swamp than any other man, and more in fact than any one since. He surveyed large portions of it and located the Dismal Swamp canal, which was 40 years in building, being built or dug entirely by hand with the use of the spade and wheelbarrow only in the work.

There is a large ditch or canal running from the margin of the swamp to Lake Drummond that was surveyed by Washington and dug by him or at his expense, and is known to this day as "Washington's ditch."

The swamp lands are very rich, and the crops of corn grown on the margins of the swamp are a source of astonishment to all beholders. Bear still live there, and come out and carry off the farmers' corn, and now and then a pig.

A CORRESPONDENT of the MANUFACTURERS' RECORD writes: "W. T. Thayer & Bro. and others have bought 85,000 acres of timber and coal land in the vicinity of Covington, Va. A third member of the party is Thomas Paxton, a leading lawyer of Cincinnati. They are said to have paid \$450,000 for the property, which includes 14 miles of coal land. On the 20th the company they have formed will meet at Charleston, W. Va., where the Thayer Bros. belong, to outline their business. W. T. Thayer is president of the corporation. The Chesapeake & Ohio Railroad has contracted to build a branch line and to have it in operation by next October."

### Making Zinc in Virginia.

The Pulaski (Va.) News, in giving a description of the immense works of the Bertha Zinc Co., of that place, says that in the plant of the Bertha Zinc Co. Pulaski has the greatest plant of the kind in the whole South, and the product is the purest zinc or spelter made in the whole world. From Lake Superior copper and Bertha zinc Russia is to-day making the brass for her cartridge shells and her best art work.

The great Connecticut clockmakers evolve their brightest dreams of idealism into clock cases and surmounting ornaments. Bertha zinc is alone used for these castings. Uncle Sam triturates his gold through a solution of Bertha zinc.

The ore is brought to Pulaski from the mines, 20 miles distant, directly on the North Carolina extension. Reaching the furnace it is analyzed and then roasted in open-hearth furnaces for several hours. Baked to a turn, it goes to the furnace proper or the retort.

These are arranged in sets of 140, each set being considered a furnace. We have ten furnaces. Before going into the retorts the ore is mixed with an equal amount of finely ground coal. The furnaces are fed by great fires below, which bring the contents of every retort to a heat that burns out the coal and reduces the ore to a fume that, striking against the retort, falls as molten metal to the bottom of the retort. From there it is drawn out into great ladles and poured into moulds which give us cakes of zinc stamped "Bertha Pure Spelter, Pulaski, Va." These cakes weigh 33½ pounds each.

The present company bought the whole layout for a good many dollars less than its present capitalization, which is \$3,000,000; they had cash, nerve and judgment.

It was the day after the election of Garfield that ground was broken for the present plant. The company owns several thousand acres of coal lands, reached by their own railroad, which extends to the fields, a distance of nearly ten miles north of Pulaski. Here is being worked a vein of low-grade coal 30 feet thick, while a deposit of pure anthracite lies deeper.

### TO MAKE BLUE POWDER.

This is the only company of any size in this country that works exclusively its own ores. We have virtually an inexhaustible supply of ore. Indeed, all question as to ore for all time to come bids fair to be solved within a month, when the company will put in operation an open-hearth furnace unlike any zinc furnace on earth, though on the principle of an arsenic factory. It is the conception of Superintendent Jones, and has been brought to seeming perfection by Thomas J. Jones, his son, chemist of the company.

Blue powder is a bi-product in the making of oxide of zinc. This invention looks to making blue powder entirely, something that has never been done, but from which the Messrs. Jones have removed all known difficulties. The blue powder carries from 80 to 85 per cent of metallic zinc. It will be reduced in the upper sets of retorts in the present furnaces, as it requires less heat and fuel than does the ore. Now the lower retorts work out two charges to one in the upper rows.

Ever since the working of our zinc mines about all the zinc to be found in the clays of the mines has escaped in the washing. The ores as sent to the furnace analyze for practical purposes 40 per cent. They form only a-third of the weight mined. The refuse has been found to analyze 20 per cent. of zinc. As the refuse is twice the bulk of the washed ore, it follows that really one-half the wealth of the mines escapes. It won't pay to work the zinc-bearing clays in the furnaces; so, as we have stated, the Messrs. Jones have evolved the scheme for reducing this waste to blue powder.

### THE FURNACE

for making this powder is a long, low building with a tower-like front, into which the charges of ore are fed onto a fire on a big open grate. The fumes rise a little way and are drawn toward the rear by the draft of a large chimney. In the passage, however, they are intercepted by frequent cool barriers which condenses the blue powder, which then falls into receptacles, from which it is to be drawn at intervals into water.

The new process proving a success, the company will erect ten furnaces for making blue powder, and the capacity of the Bertha Zinc Works will be increased 50 per cent. thereby. One can talk freely of this great company. It has plenty of money, no stock to sell and no opposition. It pays a cash dividend equal to 10 per cent. on the market value of the stock.

In the past year the operations of the company have so increased that the monthly pay-roll has risen from an average of \$16,500 to an average now of \$25,000.

### Information About Railroad Building Wanted.

HAZLEHURST, MISS., January 13, 1892.  
Editor *Manufacturers' Record*:

We were reading a few days ago in your valuable paper the statement that iron could be converted into steel at \$1.75 a ton. We are anxious to know at what cost iron can be converted into steel rails weighing 25 pounds a yard. Iron at Birmingham costs from \$9 to \$10 a ton. Should we not have steel rails from Birmingham at less than \$20 a ton? We propose to connect every capital of every county in Mississippi with every other by a dummy line of the gauge of the Illinois Central Railroad, that bisects the State from north to south. Our purpose is to teach governors of States who lecture us on the subject, and merchants of cities who deal out a little cash and much good advice, how to diversify Southern crops. We want them to know that a farmer 20 miles from a railroad can't raise vegetables, fruits, eggs or butter for market. He must have cars made for the purpose running near his farm. You can't have diversification of crops or of agricultural industries till the people everywhere have railway access for the products of their farms to Northern markets. The Signal, a newspaper printed here, has been preaching this philosophy for five months, and the alliances and townspeople have accepted it. Mr. Miller, a representative in the legislature from this county, will have a law enacted enabling county courts to build the four dummy lines from each county seat to four capitals of four co-terminus counties, and that is the end of the road-working—the terror of farming. This is a very brief statement of facts, and the consummation of the scheme will make Mississippi the richest of all the Commonwealths.

Cross-ties in this country will cost delivered 25 cents each. The graduation of the road in this level country will cost not exceeding for each mile \$250 to \$500. The iron bridges will cost \$15 a lineal foot. Pearl river is the only one in the county. Now, can you tell us what our road will cost per average mile. The bridge across Pearl river will be 200 yards long. Tell us what it will cost us from Hazlehurst, the county seat of Copiah, to Westville, the capital of Simpson county, a distance of about 30 miles. What will the civil engineering part of the job cost? Why may not the capital of every county in the South be connected with the capital of every other county in the South by dummy lines? and how otherwise can you diversify crops and change the system of agriculture in the South, where two-thirds of the cotton crop is made by negro labor, and these negroes refuse to produce anything else,

and properly and wisely, because there is no accessible market for anything else?

D. D. McREE.

[Mr. McRee is mistaken in saying that he read in the MANUFACTURERS' RECORD that iron could be converted into steel at \$1.75 a ton. The MANUFACTURERS' RECORD has not published such a statement, though such a claim has been going the rounds of some of the daily papers.—ED.]

TALLAHASSEE, FLA., January 15, 1892.  
Editor *Manufacturers' Record*:

Mr. W. L. Davids, representing the La Pierre Phosphate Co. now in Europe, is receiving considerable encouragement in the sale of our granulated soluble bone, which is a most perfect phosphatic fertilizer, having about twice the amount of available phosphoric acid that is found in any fertilizer or superphosphate, and is particularly valuable to rehabilitate soils made sour by the acid of superphosphates and nitrates.

All three of the mining shafts of this company have been enlarged from six feet square to seven feet wide by ten feet long, and are pronounced as perfect mining shafts as can be found in this country, being cased in solid four-inch plank that will last many years without repairs of any kind. Two of the ten feet in length are partitioned off from top to bottom of each shaft as a ladder-way for the miners in order that the shaft itself may be in operation without delays, the mining material being lowered often down the ladder-way.

Shafts No. 1 and No. 2 have passed through a most valuable stratum of granulated soluble bone from eight (8) to thirteen (13) feet thick, and the shafts being 600 feet apart indicate the certainty of many thousands of tons of this most perfect fertilizer. The hard rock just below this stratum is very high-grade, and even the limestone at the bottom of the shafts is very phosphatic, containing over two per cent. bone phosphate of lime.

We are preparing to make all grades of fertilizers. LA PIERRE PHOSPHATE CO.

In 1842 the American Agriculturist was founded by three brothers, Messrs. A. B., Richard L. and Lewis F. Allen. The first of these men still lives at the age of 90 to rejoice in the enlarged prosperity and influence of the magazine he founded 50 years ago. The first 10 volumes were of octavo size, each monthly issue containing 32 pages. The eleventh year the magazine was increased to its present size, and until 1856 was conducted by A. B. Allen and Orange Judd, the latter purchasing the former's interest that year and becoming sole proprietor and editor. In 1863 Dr. George Thurber, then professor of botany and horticulture in the Michigan Agricultural College, was made editor and held that position until 1885, when, his health failing, he resigned and was succeeded by Dr. F. M. Hexamer, who still occupies this post, with George A. Martin as his associate. During all these years, under its different editors and with a brilliant staff of contributors, the American Agriculturist has grown in usefulness and influence. It has more than kept abreast of the progressive spirit of the age. It has been a leader of thought in all that relates to agriculture and horticulture. It has persistently and boldly exposed and denounced frauds and shams, and has advocated the true interests of all cultivators of the soil. In its January number the American Agriculturist celebrates its semi-centennial by spreading before its readers a choice collection of articles relating to the farm, the garden and the household, with many appropriate and attractive illustrations. The MANUFACTURERS' RECORD congratulates its esteemed contemporary upon its having entered upon its 51st volume, and cordially wishes it continued and increasing prosperity.



## AT WINSTON-SALEM.

The Progress in Development of North Carolina's Twin Cities.

[Special Cor. MANUFACTURERS' RECORD.]

NORTH CAROLINA HEADQUARTERS OF THE MANUFACTURERS' RECORD, WINSTON-SALEM, N. C., Jan. 18, 1892.

While the present is not a season of the greatest activity, owing in part to the winter rains which prevail at this time of the year in this latitude, and which render all the country roads well-nigh impassable, yet the substantial development of this busy place is not checked, and, besides the evidences of advancement at hand, preparations are being carried forward for numerous important projects to be consummated with the advent of settled weather. A significant feature of the present situation is the immigration constantly coming into Winston-Salem from adjacent portions of the State, as well as from distant sections of the Union. The increase in population here has been constant and of considerable magnitude during the past year, and it represents many elements—the professions, merchants, etc., as well as mechanics and laborers. And there is every reason to believe the ingress will very greatly increase in the early spring months.

The Roanoke & Southern Railroad will be running through trains from this city to Roanoke, Va., within a very few days; the Hotel Zinzendorf, in every way equal to the famous hostleries at Asheville, will be opened to the public in the early spring, and many public and private enterprises will be in various stages of forwardness. The new railroad is going to give another north and south connection via the Baltimore & Ohio and an extension from here to the Seaboard Air Line, which will inevitably increase the business importance and magnitude of Winston-Salem. The Hotel Zinzendorf is certain to make this, with its fine winter and summer climate, a popular and noted stopping-place for tourists, hunters, etc., and the various other improvements in hand will attract larger numbers of laborers to this place than have ever before come. The outlook for an active season is certainly very favorable, and there are general anticipations of a very prosperous year during 1892.

Some day a syndicate of capitalists is going to wake up to the advantageous situation existing here for numerous operations in their line. Money is employed so profitably here in the factories that little of it is to be had for any outside purpose. Hence there are no trust companies here, none who deal in mortgage notes, none who are in a position to supply means for building purposes, and not even enough capital in the banks to much more than half supply the merchants and manufacturers' demands for money. As fine a field exists here for an active, broad-gauged financial institution of this kind as could be found in any city of similar size in the country.

Here is a point which will warrant investigation.

Rents have advanced here lately, and yet there are not enough storerooms or residences to anywhere near accommodate the demand.

Winston is certain to soon become the head center of the fine plug-tobacco interests of the United States. This is why capitalists, builders and investors in real estate will do well inevitably to identify themselves with Winston-Salem in the immediate future.

ALBERT PHENIS.

GELLERSTEDT BROS., Troy, Ala., will shortly be in the market for tiling, pressed and ornamental brick, granite cut ready for placing, white oak lumber, store furniture and French plate glass.

## IRON MARKETS.

[Special Cor. MANUFACTURERS' RECORD.]

BIRMINGHAM, ALA., Jan. 16, 1892.

Considerable sales of iron have been made during the past week, some of them at slight concessions from last week's quotations, but on the whole prices have been about steady at former figures. As was the case in the previous week, some of the furnaces accepted business at prices declined by others, the free selling being done by companies having the largest stock of the particular grades wanted.

The rate of production has been fully maintained, and Sloss No. 4 will be fired to-morrow morning. The furnace men seem to have no misgivings about being able to market all the iron they can make, and do not look for any lower prices; most of them confidently expect an improvement.

Seasonable weather has continued to favor the coal trade, and the movement of all grades has been active. One of the principal operators in this field reports that his mines have already booked all the orders for grate coal that can be turned out in the balance of the season, while the demand for steam coal is fully equal to the output. A number of enquiries have been received from New York and Philadelphia parties for prices on coal delivered on board ship at Mobile and Pensacola.

The indications all point to an important growth of the demand for Alabama coal for export, and the coal men are discussing the benefits to be derived by opening the Warrior river to navigation to an extent that will enable them to deliver coal by barges in the Gulf ports.

We quote f. o. b. cars Birmingham:

| PIG IRON.          |         |
|--------------------|---------|
| No. 1 Foundry..... | \$12 00 |
| No. 2 ".....       | 11 00   |
| No. 3 ".....       | 10 00   |
| No. 1 Soft.....    | 11 00   |
| No. 2 ".....       | 10 00   |
| No. 1 C.....       | 11 75   |
| No. 2 ".....       | 11 00   |
| Gray Forge.....    | 9 50    |
| Mottled.....       | 9 75    |

HARDY & UNDERWOOD.

CINCINNATI, January 16, 1892.

There is but little change to report in the condition and prospects of the iron trade. One or two quite large transactions have been closed and there has been a liberal run of small orders all through the Western territory. There is no disposition on the part of buyers to provide for more than their actual minimum requirements. Speculation is completely wanting. Complaints are heard from some foundries and mills of the scarcity of orders, while others are fuller than usual at this time of the year; taken all together, our judgment is that consumption is slowly improving, but production fully keeps pace with it. A very little increase on the present rate of consumption, however, would carry it beyond the producing capacity of the furnaces in blast, and the effect would speedily be felt in prices, as practically the full producing capacity of the country is now active, barring only such furnaces as are not in position to run except on considerably higher prices. There has been a good demand for Ohio silveries, which are not in as full supply as formerly. Southern car-wheel iron has felt the improved demand growing out of large car building. Lake Superior charcoal iron is dull, but large quantities are going forward on old contracts.

We quote for cash f. o. b. cars Cincinnati:

|   |         |
|---|---------|
| Southern coke No. 1 foundry.....                | \$14 75 |
| Southern coke No. 2 foundry and No. 1 soft..... | 13 75   |
| Hanging Rock coke No. 1.....                    | 16 50   |
| Hanging Rock charcoal No. 1.....                | 19 75   |
| Tennessee charcoal No. 1.....                   | 17 00   |
| Jackson Co. stone coal No. 1.....               | 16 50   |
| Southern coke, gray forge.....                  | 12 50   |
| Southern coke, mottled.....                     | 12 25   |
| Standard Alabama C. W.....                      | 19 00   |
| Tennessee C. W.....                             | 18 00   |
| Lake Superior C. W.....                         | 19 50   |

CHICAGO, January 16, 1892.

Past week has shown a continuation of conditions last reported, a good amount of

business still going on, this being the most part on coke brands, charcoal being in small demand. Prices remain unchanged. Large consumers, who have been watching the situation, take the position that on account of the continued accumulation of stocks that there is no probability of any change during the next three or four months. On the other hand, consumption is going forward heavily, and the outlook promises very heavy melting of iron during the year. While a general advance of prices is not imminent, a decided stiffening may come at any time.

We quote for cash f. o. b. Chicago:

|                                       |         |
|---------------------------------------|---------|
| Southern Coke No. 2 foundry.....      | \$15 25 |
| No. 1 soft.....                       | 14 50   |
| Lake Superior charcoal, Nos. 1-6..... | 17 25   |

ST. LOUIS, January 16, 1892.

There seems to be a general enquiry into the market on the part of the consumers, who have been waiting until after the turn of the year, believing that should a change in the condition of prices take place, it would have been about this time, but as there is no indication of iron selling for lower prices, and many things to influence an upward tendency, some heavy orders have been placed recently.

During the past two weeks a number of large Southern furnaces have blown out for repairs, and stocks on hand are either very low at these furnaces or sold for early and forward delivery. This will heavily diminish production and affect the market more or less. It is reported that one of the largest Southern furnaces, operating many stacks, is sold up on foundry grades.

We quote for cash f. o. b. St. Louis:

|   |         |
|---|---------|
| Southern Coke No. 1 Foundry.....        | \$15 50 |
| " No. 2 ".....                          | 14 50   |
| " No. 3 ".....                          | 13 75   |
| Gray Forge.....                         | 13 25   |
| Charcoal No. 1.....                     | 17 25   |
| " No. 2.....                            | 16 75   |
| Missouri Charcoal No. 1.....            | 15 50   |
| " No. 2.....                            | 15 00   |
| Ohio Softeners.....                     | 18 00   |
| Lake Superior Car Wheel.....            | 19 50   |
| Southern.....                           | 19 50   |
| Frick's Connellsville Foundry Coke..... | 3 65    |

BOSTON, January 16, 1892.

The market is quiet, buyers, for the most part, having late in the fall provided for their wants until the end of winter. There is little fear expressed of any material advance in prices in the near future, though buyers recognize that indications point rather to rise than a decline.

We quote for cash f. o. b. Boston:

|  |         |
|--|---------|
| Standard Alabama 1X Strong.....          | \$17 00 |
| " 2X.....                                | 16 00   |
| " 1 Soft.....                            | 16 00   |
| " 2.....                                 | 15 25   |
| Niagara (Strong L. S. Coke Iron) 1X..... | 18 75   |

PHILADELPHIA, January 16, 1892.

The week opened with very light sales, but towards the close the market became quite active and some large orders were booked for forge and foundry irons. The feeling in Pittsburg is much better, and there seems to be enough business in sight to keep all the large iron and steel works busy for the next six months.

We quote f. o. b. Philadelphia:

|  |         |
|--|---------|
| Standard Ala. No. 1 X.....                 | \$17 00 |
| " No. 2 X.....                             | 16 00   |
| Neutral Ala. forge.....                    | 14 25   |
| Ala. High Silicon Softeners.....           | 16 50   |
| Standard Penn. No. 1 X.....                | 17 50   |
| " No. 2 X.....                             | 16 50   |
| Ohio Softeners, No. 1.....                 | 19 00   |
| " No. 2.....                               | 18 00   |
| Standard So. C. W. Bibb, Attalla, etc..... | 22 50   |
| Lake Superior C. C., any number.....       | 20 00   |
| Bessemer Steel Billets and Slabs.....      | 26 50   |

ROGERS, BROWN & CO.

"NEELY'S GREAT HISTORICAL CHART, POLITICAL AND UNITED STATES MAP," published by F. T. Neely, Chicago, Ill., is encyclopedic in the extent and variety of the information which it gives. It is a double wall map, 5 feet 6 inches by 3 feet 10 inches, being the latest and largest map of the United States, showing States, counties, towns and railroads. On the reverse side it has a diagram showing all the political parties 11x66, a diagram showing all Presidents and Cabinets 5x66, a diagram showing political complexion of each Congress, a diagram showing creeds of the world 13x10, a diagram showing

standing armies of each nation 13x10, a diagram showing the naval tonnage of each nation 13x10, a complete map of the world 13x20, a map of Central America 10x13, a map of Alaska 10x13, a map of South Africa 10x13, a map of Upper Nubia and Habesh or Abyssinia 10x23, a map of Persia, Afghanistan and Beloochistan 10x13, a complete map of solar system (best ever made) 10x13, the names of all Cabinet officers with length of term, pictures of all the Presidents from Washington to Harrison. It is invaluable in a business office and well worth the price, \$5.

WITH the issue of January 7th the Fifth Regiment Gazette and Southern Guardsman enters the arena as a monthly periodical devoted to the interests of the volunteer militia in the South. This first number contains an interesting sketch entitled "The Fifth in Carolina," Virginia military news, and discussions and suggestions for the betterment of the National Guard, interspersed with portraits of prominent officials in command. The Fifth Regiment Gazette and Southern Guardsman will be published monthly, and will furnish its readers good literature upon interesting topics. Its editorial management will be under the control of Mr. Hanson Hiss, while Mr. Oliver Hoblitzell, Jr., will direct the business department. The Baltimore Engraving Co. has in charge the designing and execution of the illustrations. The subscription price is \$1 a year. Specimen copies will be mailed upon application to the office, 424 East Baltimore street, Baltimore, Md.

THE Radford Pipe & Foundry Co., lessee of the Anniston (Ala.) Pipe Works, have completed negotiations with the lessors, by which the latter agree to put in three new cranes and otherwise modernize and perfect the plant without any expense to the lessees. Until this result was reached the lessees had threatened to resign the lease at the end of a year. The agreement reached extends the positive term of occupancy a longer period. The works now employ about 450 men, and the statement that they are to be permanently operated will be pleasant news to the city of Anniston. We have been informed that the company has secured three important contracts since the first of the year, and are looking for a fair year's work.

THE Henry Seymour Cutlery Co., of Holyoke, Mass., is sending out a neat catalogue and price-list of its wares. Accompanying it is a calendar for 1892.

## Southern Booms.

Editor Manufacturers' Record:

Many of our literary stock speculators seem to feel called on to make a fling in every issue of their circular letters at the Southern boom towns in order to show superior sagacity and honesty in recommending their own wares to the public. "I thank Thee, O God, I am not as other men are!" would be applicable to them. That large fortunes have been won and lost in real estate North, South, East and West no one will deny. The same is true of Wall street, and maybe our own South street has some examples of the dark side of the picture. Should we institute comparison I doubt not every one would flee from the Stock Exchange as from a pestilence. Wild gamblers will lose in both cases; faster in stocks, as in short cards, because the game is sooner decided. But is that a reason why men of discretion should never buy any stock, or why men of good judgment should never buy town property? There are many good, thrifty, prosperous towns in the South, as elsewhere, where one can put his money safely and reap a good reward. In no place can this be done without exercising some judgment. Where parties buy simply because they think some fool will come along and pay them 100 per cent. profit in ten days, there will be disappointment.



## TRADE NOTES.

## An Important Building Company.

In rapidly-growing Southern towns like Newport News one of the greatest drawbacks nearly always seen is the scarcity of dwelling-houses. Hundreds of working-men and many business men are unable to have their families with them because they cannot find houses for rent or sale. This condition has long prevailed at Newport News, and the steady increase of population there, because of the constant additions to the number of employees in the great ship-yard and other industries, and the enormous growth of the foreign trade since the establishment a month or two ago of four regular European steamship lines, makes it daily more important that very extensive house-building operations should be undertaken. With these facts in view, Messrs. A. S. Buford, ex-president Richmond & Danville Railroad Co.; John H. Montague, president Merchants & Planters' Savings Bank, Richmond, Va.; E. A. Catlin, president Security Savings Bank, Richmond, Va.; W. C. Seddon, of W. C. Seddon & Co., bankers and brokers, Baltimore, Md.; Hon. George D. Wise, member of Congress Third Congressional district of Virginia, Richmond, Va.; George A. Schmeltz, of Schmeltz Bros., bankers, Newport News, Va.; C. M. Braxton, vice-president First National Bank, Newport News, Va., have organized the Newport News Building Co. with a capital stock of \$500,000. This company has secured very valuable property at Newport News, through which the electric street-car line between Old Point, Hampton and Newport News runs, and will engage in building dwelling-houses. The property secured is in every respect desirable; it is high, well drained, and faces Hampton Roads, making it a most charming place for residences. The high financial standing of the people who have organized this company is a sufficient guarantee that it will be wisely managed. Col. A. S. Buford is the president of the company, and Mr. L. P. Rout is the general agent. Either of these gentlemen can give full particulars as to this enterprise. They desire to secure good agents.

THE attention of the young business men of the South is called to the advertisement of the Eisenbrandt Cycle Co., of Baltimore, in this issue. It is offering for sale at remarkably low prices a line of second-hand safeties and ordinaries in perfect running order and good condition. These wheels were manufactured by the best-known makers, and prospective wheelmen desiring to save money upon their outfit should correspond with them. A complete list giving full description and prices can be had on application.

In another column will be found an advertisement offering for sale the right to manufacture the "Perfect bread-raiser." It is a patented article, and has been successfully introduced in seventeen of the States and one foreign country. Negotiations can be entered into with Mrs. Mary E. Mapp, of Milledgeville, Ga., who is the inventor and patentee of the "Perfect bread-raiser."

THE business of the Graham Twist Drill Co., of Detroit, Mich., manufacturers of patent groove shank twist drills, wood-bits and holders, reamers, milling cutters, etc., has been purchased by the Graham Twist Drill & Chuck Co. The product of the old company has a large sale and has gained a flattering reputation.

THE county authorities of Kalkaska, Mich., have awarded the contract for four steel jail cells to E. T. Barnum, manufacturer of wire and iron work, Detroit, Mich., in the face of strong competition from Cleveland, Detroit and other cities.

## 200 Byram - Colliau Cupolas



FOR DELIVERY IN '92.

To accomplish this we have greatly

REDUCED PRICES.

Prove this by writing to

**BYRAM & COMPANY,**  
IRON WORKS,  
DETROIT, MICH.  
U. S. A.

## Bischoff Metal Ceilings, (PATENTED.)



It will pay to investigate and write for catalogue.

Estimates submitted on application.

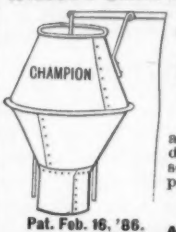
**Fred. F. Bischoff & Co.**  
24 W. Lake St.,  
CHICAGO, - ILL.

## METAL SKYLIGHTS

Made of galvanized iron and copper. Absolutely no leakage from any source; no dripping or sweating; fire-proof; ventilating. Galvanized iron and copper cornices and gutters. Sheet metal work for buildings. Send for illustrated circular.

**E. VAN NOORDEN & CO.,**  
363 Harrison Ave. BOSTON, Mass.

## WILSON'S CHAMPION SPARK ARRESTER.



"Best open draught restorer in the world" FOR Saw Mills, Gineries AND Tramway Engines.

Insist on getting this arrester, and if your dealer can't supply you, send for circulars and prices.

**JESSUP BROS.,**  
Sole Manufacturers,  
AUGUSTA, GEORGIA.

## R. MUSHET'S SPECIAL and Titanic STEELS

How to get the best results with "R. Mushet's Special Steel." Greatly increase your speeds and feeds; then compare the work you turn off with that done by any other known steel. The economy will be apparent.

**B. M. JONES & CO**  
Sole Representatives in the United States,  
11 & 13 Oliver St., BOSTON, MASS.  
143 Liberty St., New York.

## STARRETT'S FINE TOOLS



Skilled mechanics prefer them. Live dealers sell them. Send for Catalogue. . . . .

**L.S. Starrett**  
ATHOL, MASS., U. S. A.

SOMETHING NEW.—How to Cover Pulleys with Leather and make Belts Endless. Write for particulars. CROSBY MFG. CO., Cleveland, O.

## JONES SCALES "THE CHEAPEST, THE BEST." FOR FREE CATALOGUE

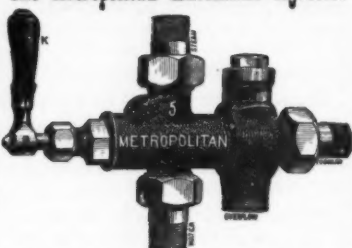
JONES OF BINGHAMTON, Binghamton, N.Y.

After being on the market 6 years, The Acme Still Leads in Durability, Efficiency and Fuel Economy



ROCHESTER MACHINE TOOL WORKS,  
Sole Builders, ROCHESTER, N. Y.  
Send for Illustrated Catalogue.

## The Metropolitan Automatic Injector.



The only Automatic Injector that is operated entirely without the use of any globe valves.

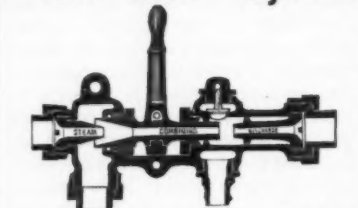
TO START—Open Valve K.  
TO STOP—Close Valve K.

It can be used either as a lifter or non-lifter. It is adopted by the largest Engine Builders, and is for sale by the LARGEST SUPPLY HOUSES IN THE U. S.

Ask your dealer or send to us for circular and prices.

**JENKINS BROS., 71 John St., New York.**

## "Little Giant" Injector.



THE BEST BOILER FEEDER. WORKS IN ANY WATER.

## "RUE'S" EJECTOR,

For raising, forcing or conveying water or other liquids.

Rue's Boiler Washing and Testing Apparatus. Uses hot water.

**RUE MFG. CO.**  
PHILADELPHIA, PA.  
Catalogue free upon application.

## "Genuine Merit Will Tell."

This truth is constantly exemplified by the

Remington Standard TYPEWRITER.

Every detail of the Remington is a tested part—every completed Machine a piece of finished mechanism.

The Remington of to-day is the realized ideal of a practical, durable and wholly satisfactory Writing Machine.

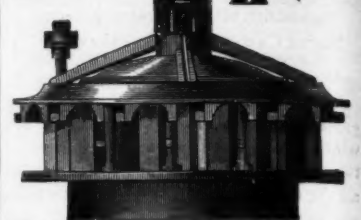
A combination of experience, energy, skill and capital has made and will keep the

Remington Standard TYPEWRITER  
The best Writing Machine for every practical use to which a Typewriter may be applied.

**WYCKOFF, SEAMANS & BENEDICT,**

15 N. CHARLES STREET.

## SUCCESS Water Wheel.



This Wheel is strong and durable. Excelled all other wheels in the great trial tests. Is in use all over the nation. I also make a specialty of HEAVY GEARING & MACHINERY

For Paper, Cotton and Grist Mills.  
**S. MORGAN SMITH, York, Pa.**

## THE BRIDEBURG MACHINE WORKS TEXTILE MACHINE MAKERS.

Worsted Machinery, Wool Machinery, Cotton Machinery, Built to Order.

HIGH GRADE | WILLIAM E. MCGILL,  
WORK ONLY. | Bridenburgh, Philada., Pa.  
Repairs for Bridenburgh Machinery furnished promptly.

## "THE SINTZ" Gas and Gasoline Engines.

STATIONARY AND MARINE  
Makes its own supply of gas from gasoline, and at less expense than any other engine. No boiler, coal or fireman required. Runs with either manufactured or natural gas. Specially adapted for small boats and launches and electric light work. Circulars free. Mention this paper.

**CLARK SINTZ, Mfr.**  
SPRINGFIELD, OHIO.

## GAS and GASOLINE ENGINES STATIONARY and PORTABLE. All Sizes.

Dwarfs in Size, but Giants in Strength.  
Expense one cent an hour per horse power and requires but little attention to run them. Every Engine Guaranteed. Full particulars free by mail. Mention this paper.

**VAN DUZEN**  
GAS & GASOLINE ENGINE CO. Cincinnati, O.

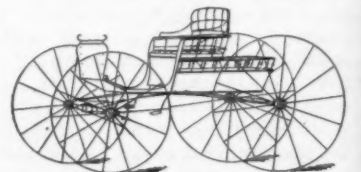
## MULLER LATHES



PATENTED.  
With New and Valuable Features.

MADE ONLY BY THE  
**BRADFORD MILL CO.**

8th & Evans, CINCINNATI, O.  
Photographs and Prices on application.



Our many new styles and large variety will interest every purchaser of vehicles. Send for catalogue.



**H. H. BABCOCK COMPANY,**

**FINE - CARRIAGES**

Of Every Description.

**WATERTOWN, N. Y.**

New York City Salesrooms, 406-412 Broome Street.



**STEAM JACKET**  
FEED WATER  
**BOILER AND PURIFIER**

BOILS THE  
FEED WATER  
INCREASES  
STEAMING  
CAPACITY.  
STRONGEST  
AND  
MOST DURABLE

SAVES  
FUEL  
SAVES  
BOILER  
REPAIRS  
THOUSANDS  
IN  
USE

**Wm. BARAGWANATH & SON**  
48 50 52 W. DIVISION ST.  
CHICAGO

### Stow Flexible Shaft

Invented and Manufactured by the  
**STOW MFG. CO.**  
Binghamton, N. Y.  
Established in 1875.  
For Tapping and  
Reaming Stay  
Bolt Holes in  
**BOILERS.**  
Portable Drilling.



THIS WEEK OUR INQUISITIVE FRIEND  
UPON HIS RETURN FINDS THIS  
AWAITING HIM:

### Railing Fittings

IN MALLEABLE IRON, IN POLISHED BRASS,  
AND IN GREAT VARIETY.

For Building of Iron or Brass Pipe  
Fences, Fire Escapes, Stair Hand  
Rails, Enclosing Engines and  
Machinery, Exhibition Spaces, etc.



Full Descriptive Circular with Price-  
List of these Goods mailed to any  
address upon application.  
Mentioning this advertisement.

MANUFACTURED BY  
**PANCOAST & MAULE,**  
243-245 South Third Street,  
PHILADELPHIA.

**Don't You**

SOMETIMES HAVE CALLS FOR  
FITTINGS OF THIS CHARACTER?  
IF YOU DO—WRITE US. (No. 2.)

### G. L. Stuebner & Co.

Successors to Stuebner & Woods,

MANUFACTURERS OF

**Self-Dumping Steel & Iron  
Hoisting Tube,**



Side and Bottom Dumping  
Cars for Coal Elevators,  
Iron Wheelbarrows, Hoisting  
Blocks, Bottom-dumping Tube  
for Coaling Locomotives, &c.  
**LONG ISLAND CITY, N. Y.**  
Send for circular and prices

**SOAP DIES & PRESSES**  
**MACHINERY** A.W. HOUGHIN **CANDLE**  
MACHINERY BROOKLYN, N.Y. ESTIMATES  
& CATALOGUES FREE

**PATENT**  
**VENETIAN BLINDS**  
AND  
**METALLIC**  
**WINDOW SCREENS.**  
S. I. FISHER  
510 512 TALMADGE  
CHICAGO

### Sliding Blinds and Screens.

The "Willer" Sliding Blinds are  
made in sections to slide vertically,  
are balanced by springs, contain Roll-  
ing Slats wherever wanted and are  
furnished complete, including finish  
and hardware.

The "Willer" Folding Blinds are  
furnished with our Improved Rolling  
Slats without the usual wooden rod  
in front.

"Regular" Inside Folding Blinds,  
as furnished by us, are of better ma-  
terial and workmanship than usually  
supplied by others.

The "Willer" Sliding Window  
Screens slide up and down, are bal-  
anced by springs and cover either half  
of the window.

The "Willer" Screen Doors are  
noted for their unique and tasty de-  
signs and their superior quality of  
workmanship.

ALL GOODS MADE TO ORDER ONLY.  
CATALOGUE ON APPLICATION.

**Willer Manufacturing Co.,**  
**MILWAUKEE, WIS.**

### THE SIMMERLY DERRICK CO.

186 to 194 W. Center St.  
**CLEVELAND, O.**



Builders of **STEAM REVOLVING DERRICKS**  
for handling Coal, Ore, Stone, Lugs, Phosphate,  
etc., etc., also for Crib Building, Constructing  
Canals, Excavating, etc. Also manufacturers of  
Coal and Ore Buckets, Cars, Steam Pumps and  
Patent Friction Clutches.

### TAPER-SLEEVE PULLEY WORKS.

211 W. 12TH ST.  
**ERIE, PA.**

Manufacturers of  
Taper-Sleeve Wood  
Belt Pulleys, Adjust-  
able Dead Pulleys,  
Friction Clutch Pul-  
leys, Friction Clutch



Couplings, Wood  
Pulleys in Half,  
Taper-Sleeve and  
Compression Cou-  
plings, Shafting, Fast  
and Drop Hangers.  
Correspondence so-  
lited.  
**Friction-Clutch Pulley.**

### ALEX. D. CUNNY.

### QUEEN CITY PATTERN WORKS.

Patterns made to order for Machinery, Stove  
and Architectural Work. Metal Letters made  
and a large stock always on hand.

101 and 103 E. Second St., Cincinnati, Ohio.  
Agent for White's Flexible Metallic Fillet.

### Cleveland and Hardwick

**ERIE, PA.**  
Manufacturers of

### STEAM ENGINES AND BOILERS.

PROPRIETORS OF  
**ERIE ENGINE WORKS.**

### BRYANT IMPROVED AUTOMATIC High-Speed Safety Engine.



Manufactured by  
**THE WHITMAN &  
BARNES MFG. CO.**  
Syracuse, N. Y.  
Automatic governor  
non-explosive  
boiler, no extra in-  
surance, no engi-  
neer, no sparks,  
ashes or smoke.  
Specially designed  
for those wantin  
power from 2 to 5  
h.p. This is the  
safest, cheapest  
and most reliable  
power known. Fuel—kerosene oil or natural gas

### TRIPOD BOILER



Three  
Points of  
Superiority  
Guaranteed:  
**Safety,  
Economy,  
Low First Cost**  
Repeated tests prove that it is  
absolutely Non-Explosive and  
the most Durable ever made.  
Strong testimonials from hun-  
dreds of users, in all parts of the  
country.  
Size 10 to 1,000 H. P.  
For full information address,  
**HAZELTON TRIPOD BOILER CO.**  
809 Monon Block, CHICAGO, ILL.

Address:  
**RICHMOND, INDIANA.**

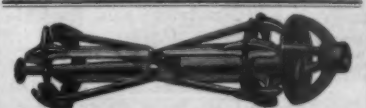
WE MAKE  
**Tubular Boilers, Six-Inch Tube  
Boilers, Two-Flue Boilers,  
Fire-Box Boilers, Tanks,  
Smokestacks.**

Send for Catalogue "A" to  
**FULTON BOILER WORKS,**  
JOHN T. CAULFIELD, Proprietor.

### WEST BRANCH BOILER WORKS.



Boilers, Stacks, Tanks and Sheet Iron Works.  
Steam Fittings of all kinds.  
**E. KEELER CO., Williamsport, Pa.**  
Agents for Gilbert's Universal Wood Split Pulley



**THE FRONTIER MANUFACTURING CO.** find as a result of two years of  
satisfactory trial that their

### PATENT LEVER FLUE CLEANER

is the best in the market. Why? Because the  
ends are protected from breakage by the button;  
its native flexibility entirely supercedes the old  
springs; the only cleaner with a follower to  
remove the refuse. Quicker and more easily  
adjusted than any other; better made; does  
better work; lasts longer.

**FRONTIER MFG. CO., Buffalo, N. Y.**

### NEW SYSTEM

### Water Filters

For All Purposes and of Any  
Desired Capacity.

**J. A. BOWDEN & CO.**  
**DETROIT, MICH.**

### WIRE RAILING,

WIRE SCREENS, WIRE CLOTH,  
And All Kinds of WIRE WORK for Churches,  
Institutions, etc.

**H. BALDERSTON & SON,**  
(ESTABLISHED 1793)  
128 South Calvert Street, BALTIMORE, MD.

### WIRE RAILING

AND  
ORNAMENTAL WIRE WORKS.

**DUFUR & CO., 311 N. Howard St., Baltimore, Md.**  
Wire Railing for Cemeteries, Lawns, Gardens,  
Offices and Balconies; Window Guards, Tree  
Guards, Wire Cloth, Sieves, Fenders, Cages, Sand  
and Coal Screens, Iron Bedsteads, Chairs, &c.

### IRON RAILINGS

FOR  
Bridges, Parks, Residences.

**IRON DOORS AND SHUTTERS.**

**BUILDERS' IRON WORK.**

**BELMONT IRON WORKS, LIMITED,**

Successors to  
Manly & Cooper Mfg. Co. **PHILADELPHIA, PA.**

### WIRE & WIRE GOODS.

Wire Cloth, Rope, SCREENS for  
Coal and Ores, Barbed and  
Plain Fencing Wire, Black  
and Galvanized.



Artistic Work a Specialty.  
Send for Catalogue and  
Mention this Paper.

### McShane BELL Foundry

Fine Iron and Brass Castings Made to Order.  
Manufacture those cele-  
brated Bells for Tower  
Clocks, Church-Houses,  
Cotton Mills, Factor-  
ies, &c. Prices and cata-  
logues sent free. Address  
**H. McSHANE & CO.**  
Baltimore, Md.  
Mention this paper.

### WEST & BRANCH,

**RICHMOND, VA.**

### Fine Plumbing and Ventilating.

Heating by Steam or Hot Water.

Manufacturers' Agent for **BOILERS, BLOWERS**  
and other goods in our line. Write for prices.

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Manufacturers' Agent for **BOILERS, BLOWERS**  
and other goods in our line. Write for prices.

# The Hackney Power Hammer

*The Measure of Excellence and Profit.*

The durability of the machine and the quantity—*with quality*—of work produced, is nowadays the measure of excellence and profit, and in this respect the "Hackney" is far in the lead.

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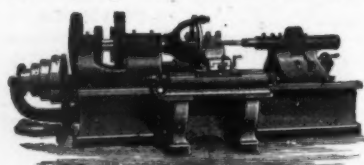
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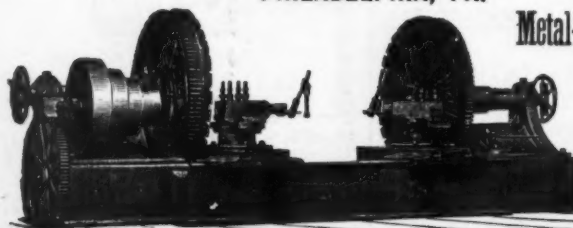
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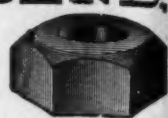
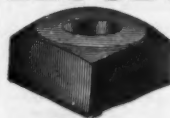
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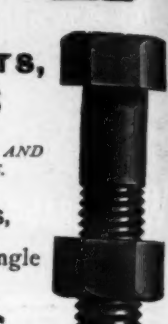
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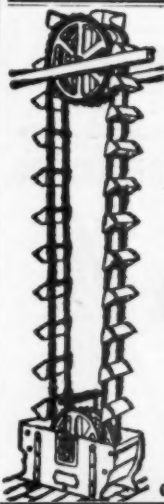
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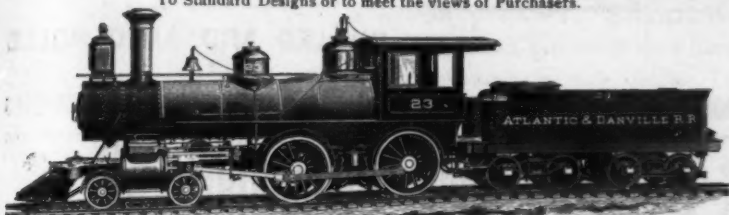
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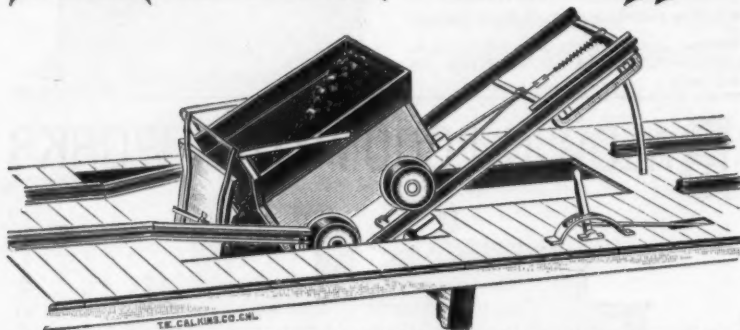
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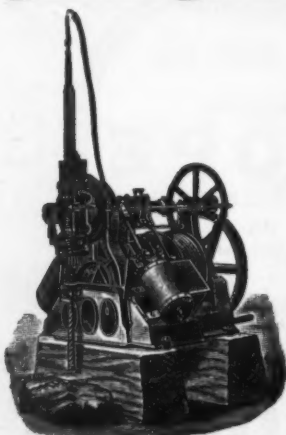
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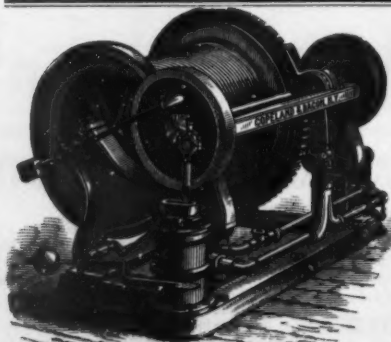
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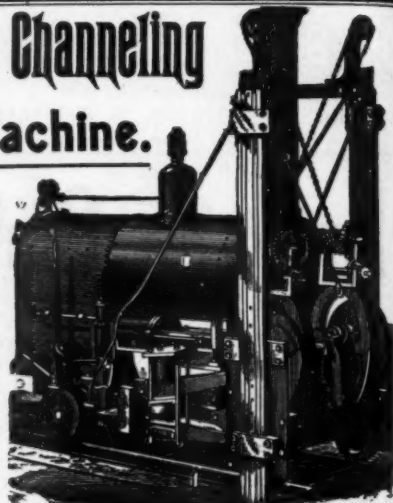
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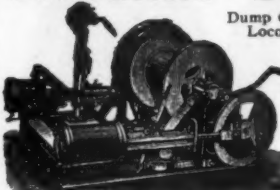


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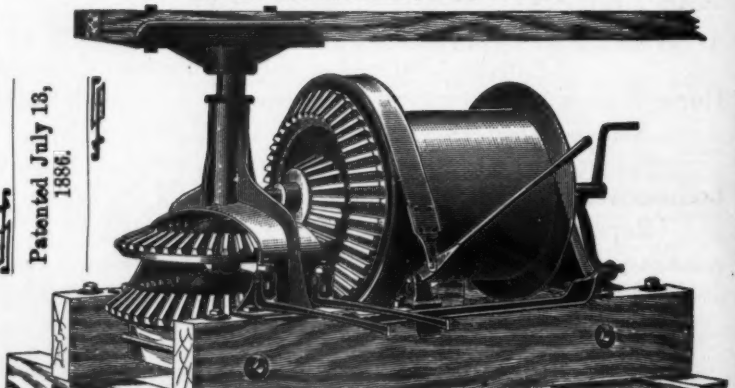


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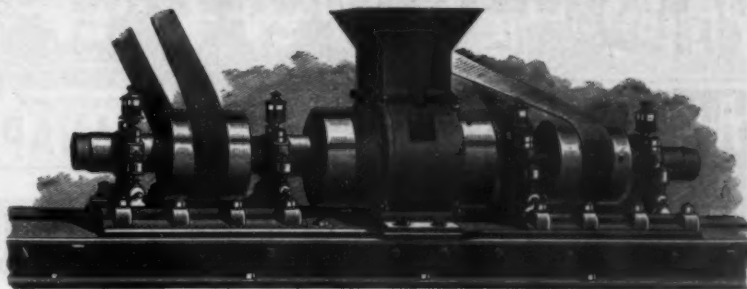
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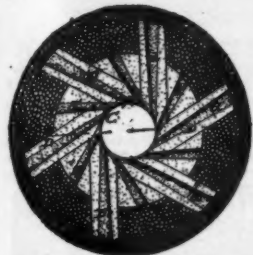
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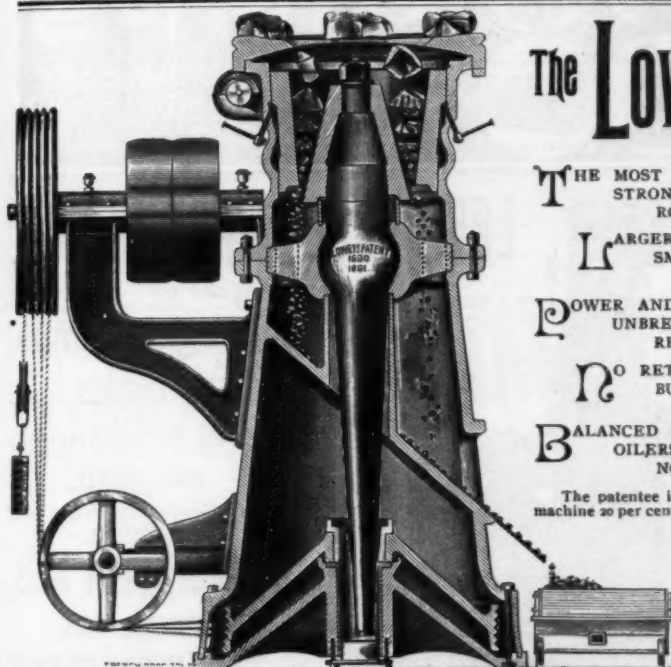
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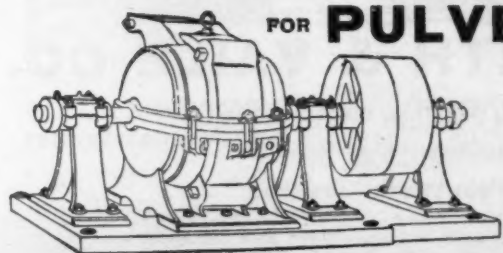
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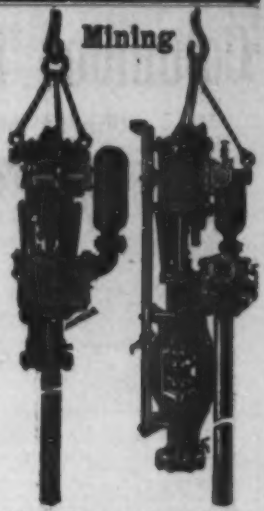
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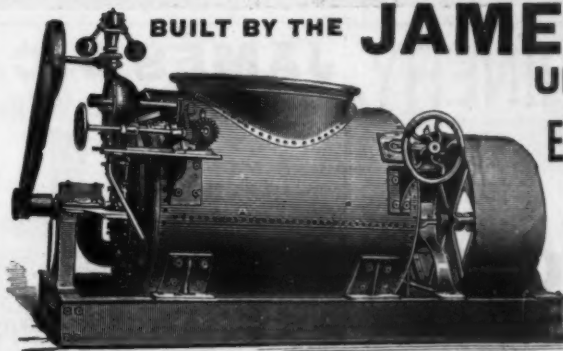
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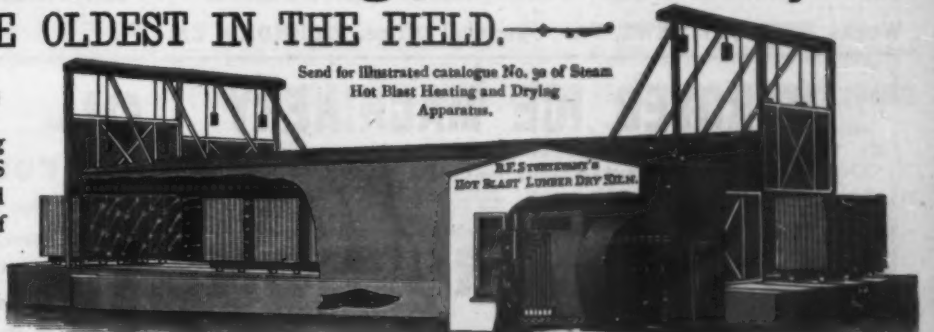
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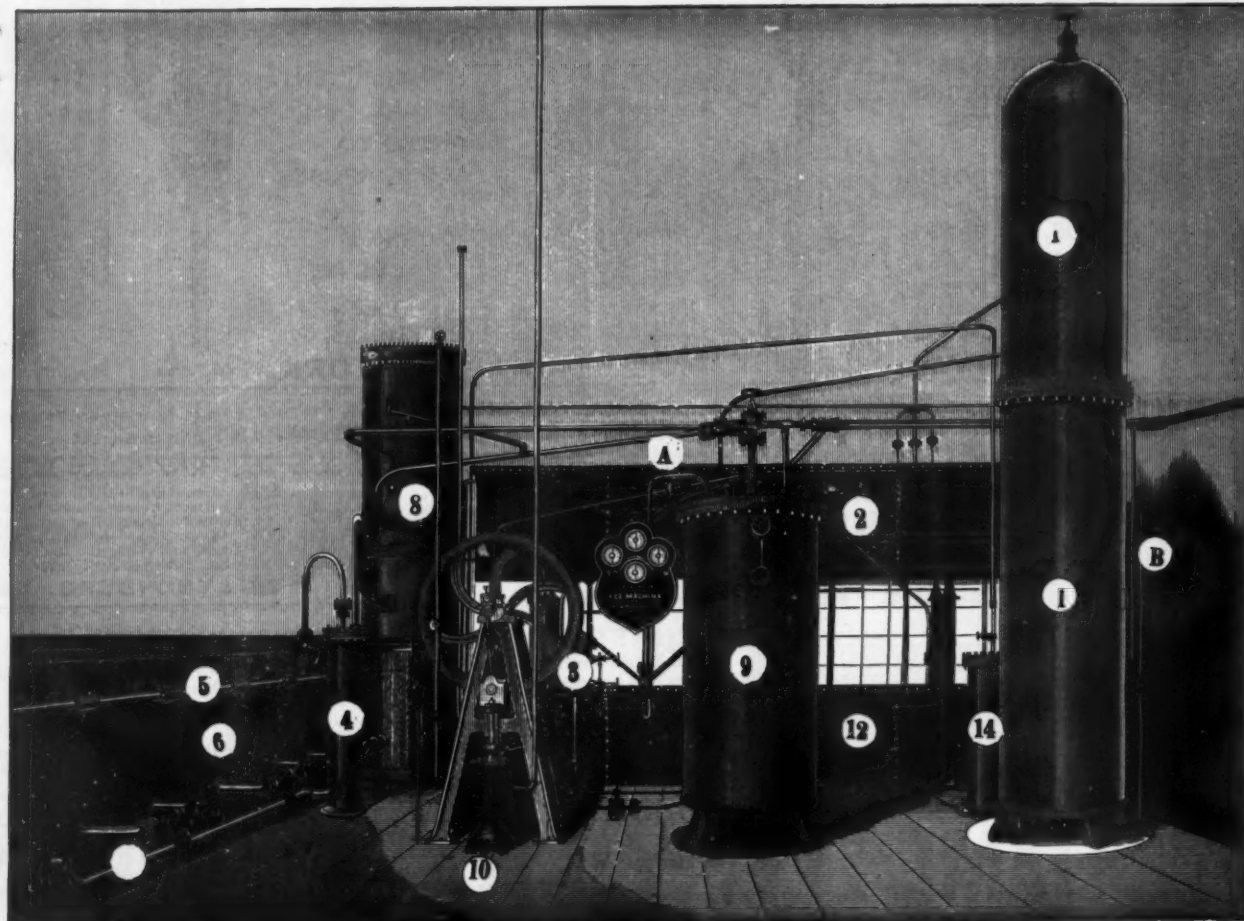
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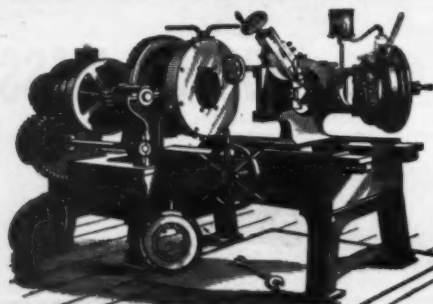
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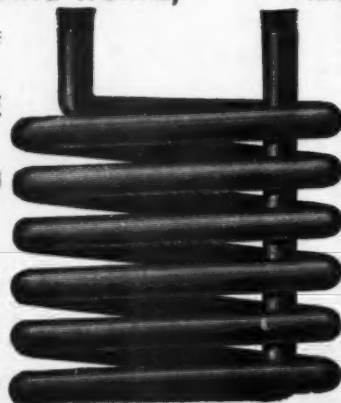
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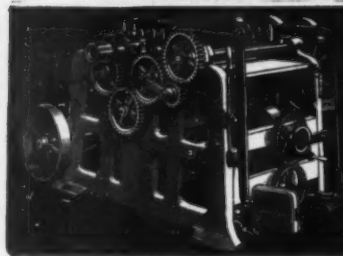
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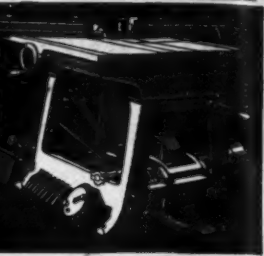
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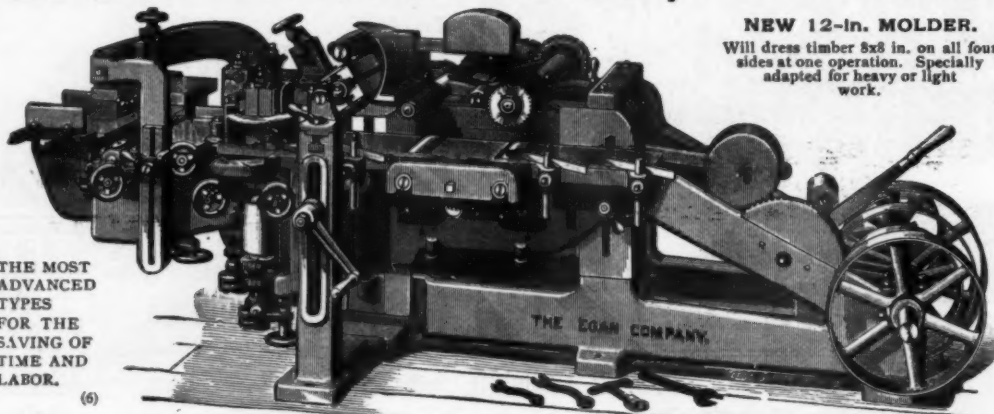
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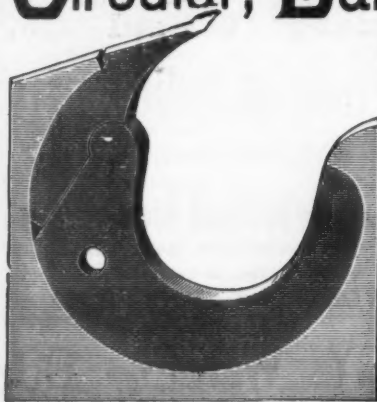
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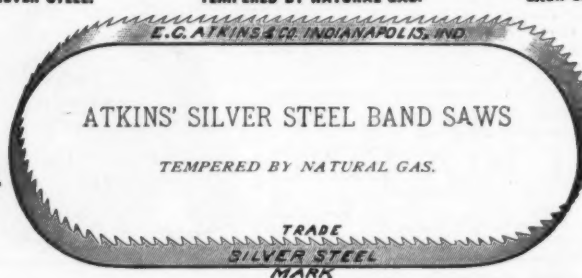


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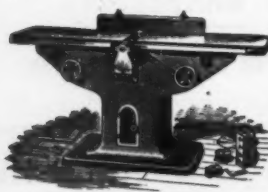
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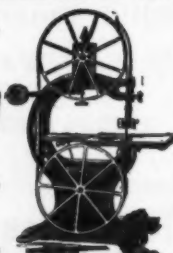
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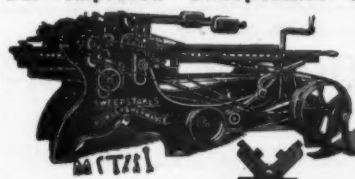
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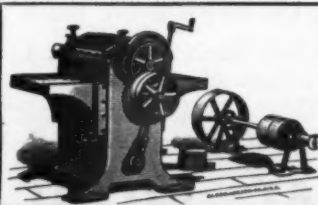
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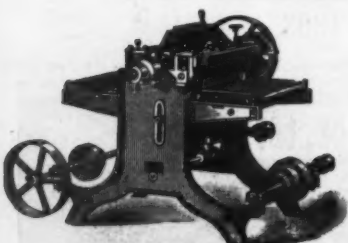
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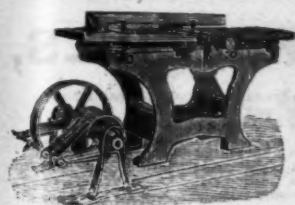


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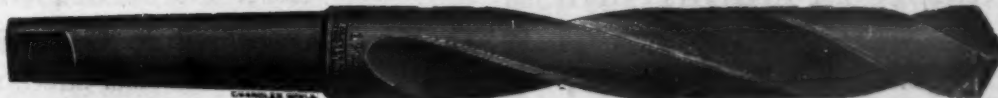


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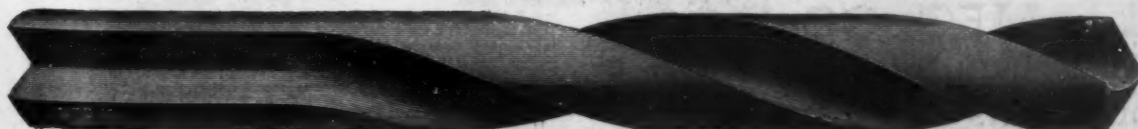
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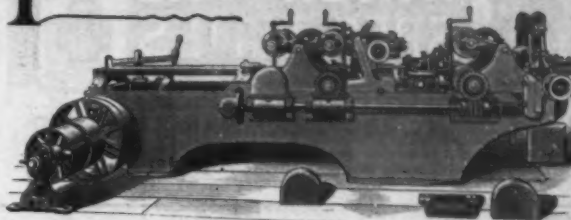
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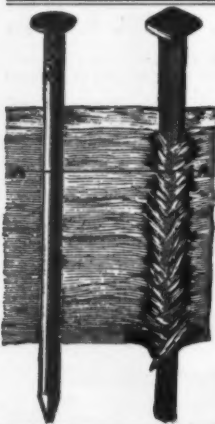
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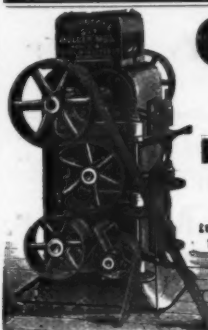
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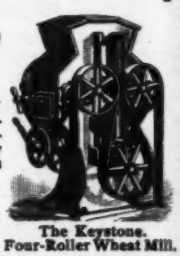
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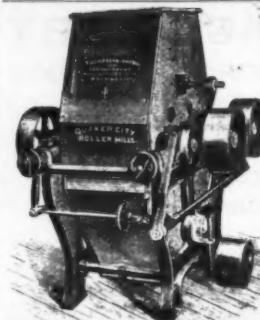
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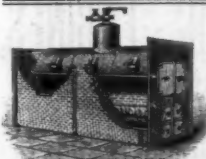
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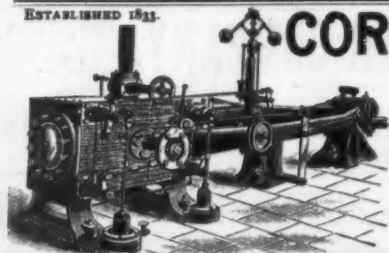
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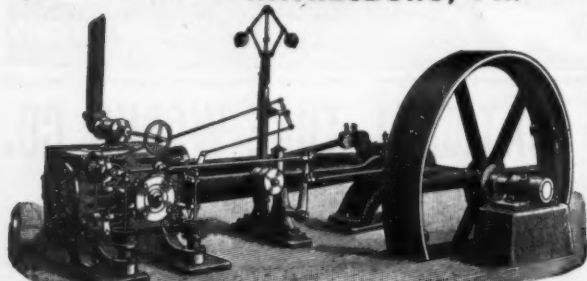
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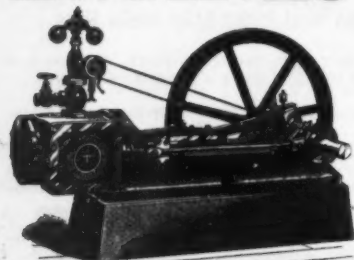
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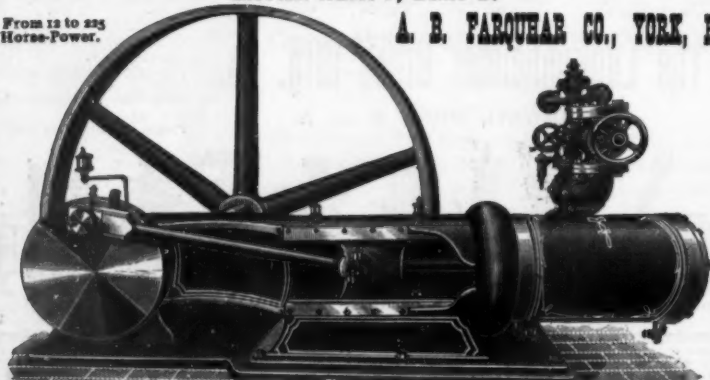


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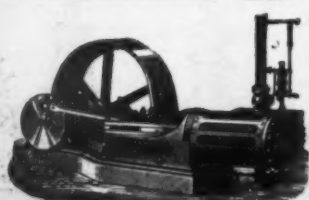
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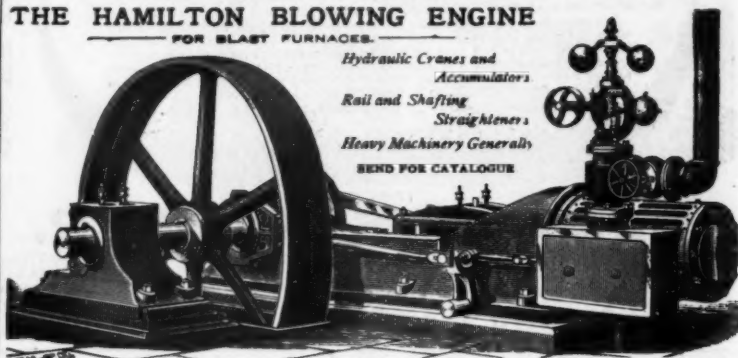
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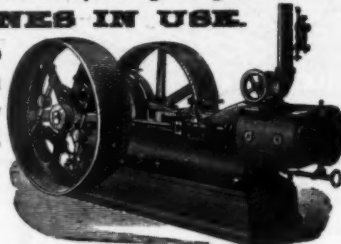
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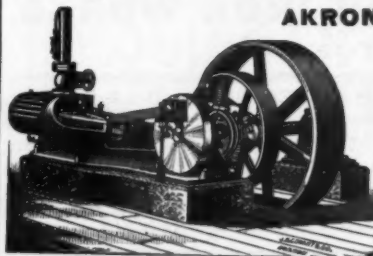
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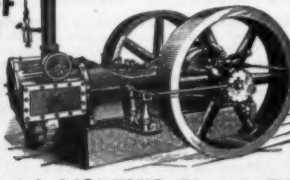


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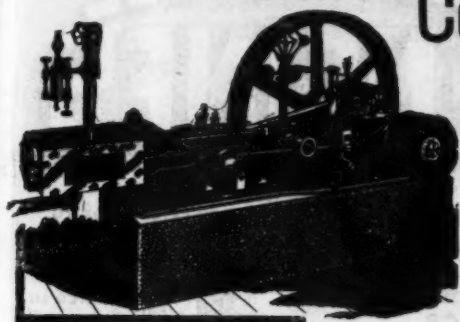
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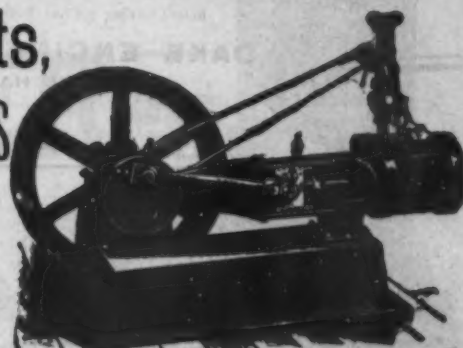
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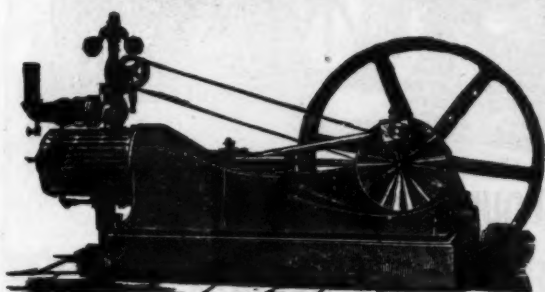
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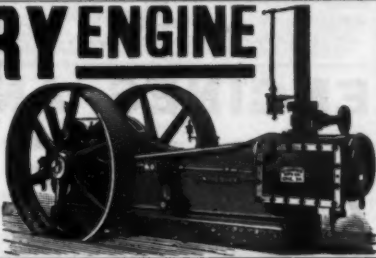
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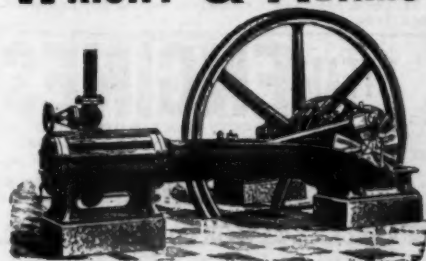
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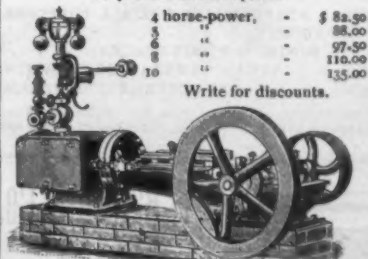
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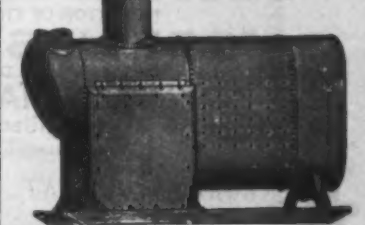
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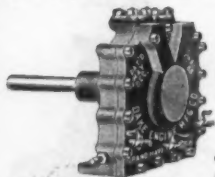
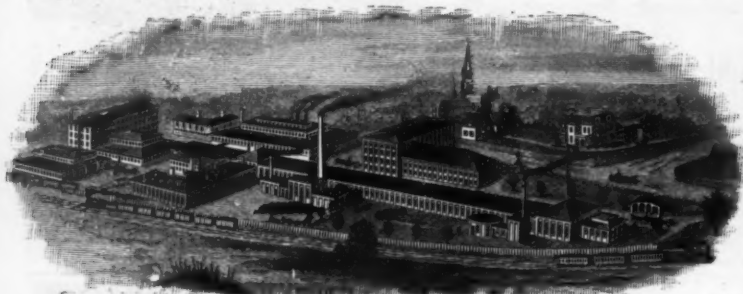


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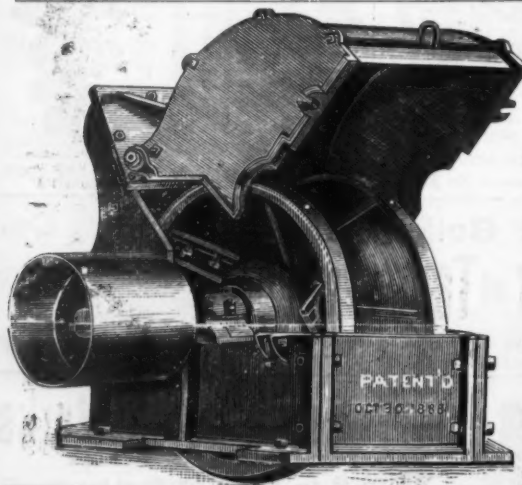
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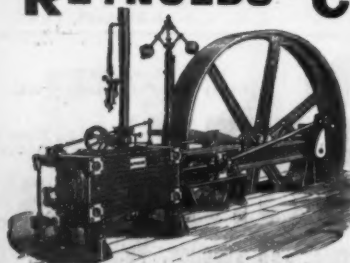
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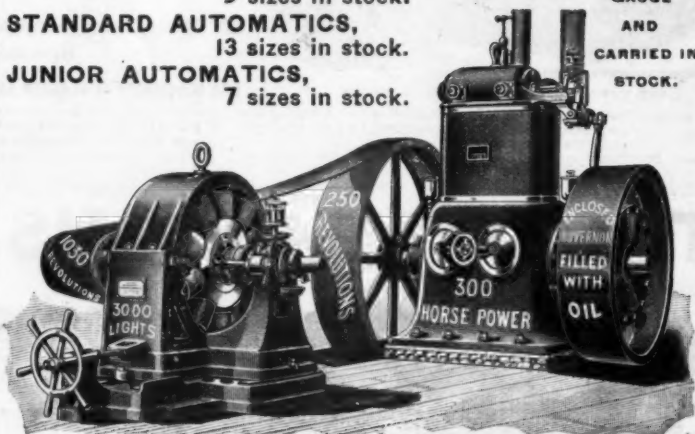
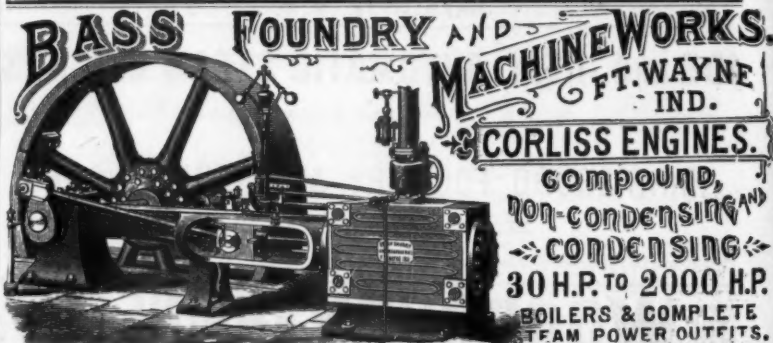
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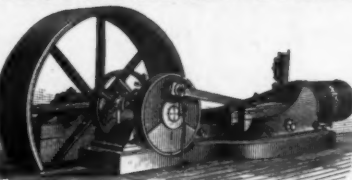
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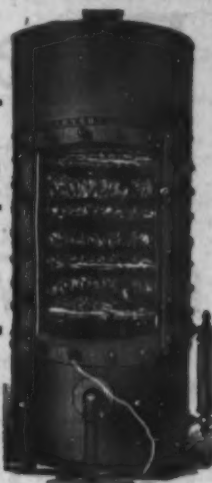
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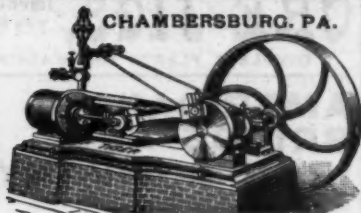


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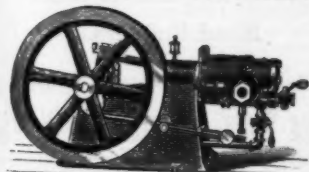
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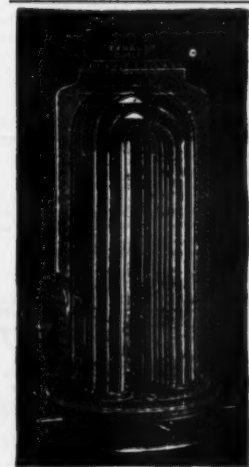
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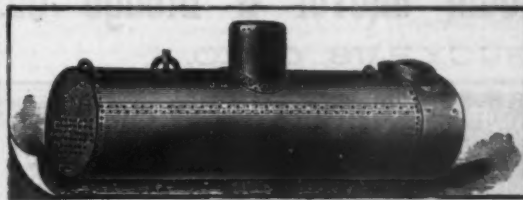
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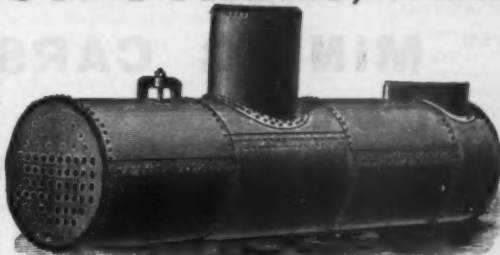
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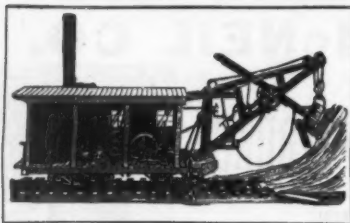
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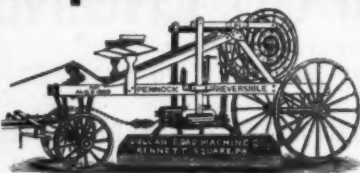
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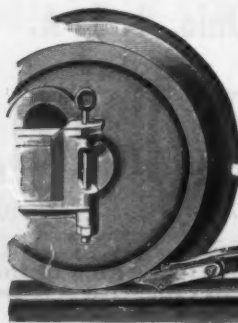
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"HERCULES" Steel Scoop.PATENTED APR. 17, 1881.  
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## Railroad Construction

**Albany, Texas.—Railroad.**—An engineering corps, in charge of Major Duval, is reported as surveying a route from Albany in the direction of Anson for the extension of the Texas Central Railroad (office, Walnut Springs), previously reported.

**Atlanta, Ga.—Electrical Railroad.**—It is understood that efforts are being made to induce the Atlanta & Chattahoochee River Railroad Co., lately reported as building a 13-mile electrical railroad, to extend its line to Marietta.

**Atlanta, Ga.—Electrical Railroad.**—The East Lake Land Co., previously reported as to probably build an electrical railroad, will charter the Atlanta, East Lake & Decatur Street Railway Co. to construct same. The company will lay from 3 to 5 miles of track. A. C. Bruce, president, can be addressed.\*

**Bel Air, Md.—Railroad.**—It is probable that arrangements will be made in a short time for completing the Deer Creek & Susquehanna Railroad, previously mentioned, from Bel Air to Stafford.

**Berkley, Va.—Railroad.**—A bill has been introduced in the legislature to charter the Berkley & South Mills Railroad Co. to build a railroad from Berkley or some point on the Southern branch of the Elizabeth river to South Mills, N. C., or some point in North Carolina. This is probably the Norfolk & South Mills Railroad, reported in last issue as applying to the legislature for a charter.

**Charleston, S. C.—Railroad.**—A surveying corps, in charge of George M. Brockman, of Norfolk, Va., has commenced the survey of the Norfolk, Wilmington & Charleston Railroad from Charleston northward. Other corps are in the field, and it is expected that the preliminary survey from Norfolk to Charleston will be completed by March 1.

**Chattanooga, Tenn.—Railroad.**—The relaying of the track from Chattanooga to Oakdale with 75 pound steel rails, mentioned in last issue, is to be done by the Queen & Crescent System (office, Cincinnati, Ohio).

**Clarksburg, W. Va.—Railroad.**—The Pennsylvania Railroad Co. (office, Philadelphia, Pa.) has, it is stated, submitted a proposition to build the Waynesburg & Washington Railroad to Clarksburg if right of way is secured.

**Covington, Va.—Railroad.**—A bill has been introduced in the legislature to charter the Potts Valley Railroad & Iron Co., to construct a railroad from a point on the Chesapeake & Ohio Railroad at or near Covington through the intervening counties to the State line, to connect with the Norfolk & Western Railroad. The authorized capital stock is \$5,000,000.

**Denison, Texas.—Railroad.**—R. R. Cable, president Chicago, Rock Island & Pacific Railroad Co. (office, Chicago, Ill.), is quoted as stating that his company will build an extension of from 120 to 130 miles in length from its present terminus in the Indian Territory through the territory and 20 miles or so into Texas to some point or to some two points where connection can be made with the Missouri, Kansas & Texas Railroad and the Gulf road. The connection with the first-named road will, it is believed, be made at either Denison or St. Jo.

**Elberton, Ga.—Railroad.**—The Elberton Air Line Railroad, a narrow-gauge road extending from Elberton to Toccoa, a distance of 30 miles, and operated in connection with the Richmond & Danville Railroad, will, it is reported, be made a broad-gauge road early in the coming spring. John H. Jones, of Elberton, is president, and can give particulars.

**Greensboro, N. C.—Street Railway.**—The Greensboro Street Railway Co. will shortly commence surveying for its street railway previously mentioned.

**Gulfport, Miss.—Railroad.**—The Gulf & Ship Island Railroad is said to have been purchased by Chicago (Ill.) capitalists, who will at once build the road through to Jackson, Tenn. The road is projected from Gulfport to Jackson, Tenn., a distance of about 380 miles, and is completed from Gulfport north 20 miles. W. H. Hardy, president, Meridian, Miss., can give information.

**Hinton, W. Va.—Railroad.**—The organization of the Hinton & New River Railroad Co., lately reported as to build a railroad from Hinton to the mouth of East river, a distance of about 33 miles, has been completed, and survey will be made at once.

**Little Rock, Ark.—Railroad.**—The Kansas City, Arkansas & New Orleans Railroad Co. has executed a mortgage to secure an issue of \$6,000,000 of bonds for construction purposes. This company was previously reported as chartered by G. B. Foster, of Beebe; John Sims, of Hazen; Merritt Jones, of Little Rock, and others, to build a railroad from the northern part of Arkansas, through various counties, a distance of 300 miles, and to ultimately extend to New Orleans. The counties through which the company is privileged to build are Marion, Baxter, Searcy, Stone, Van Buren, Cleburne, White, Arkansas, Lonoke, Prairie, Jefferson, Drew, Ashley, Bradley and Union.

**Nashville, Tenn.—Electrical Railroad.**—The Overland Railway, lately mentioned, will be sold

under foreclosure proceedings, and after the sale new capital will be invested in rebuilding the road and the equipment of the entire line from the public square in Nashville to Glendale Park with electricity. Application has been made to the city council for the right to use electricity. F. W. Hunter & Co. can give further details.

**New Berne, N. C.—Electrical Railroad.**—William C. Clarke, of Wakefield, R. I., and associates, previously reported as obtaining franchise to build an electrical railroad, have given bond to commence the construction of same within 6 months and have the road in operation within 6 months thereafter.

**Portsmouth, Va.—Electrical Railroads.**—The Port Norfolk Electric Railway Co., lately referred to, will apply to the city council for right of way. The officers of this company are S. M. Cooper, of Cincinnati, Ohio, president; W. H. Stewart, vice-president, and M. W. Mason, general manager. The committee on streets will recommend the granting of right of way to the Portsmouth Electric Railway Co., recently reported, which proposes constructing a belt line.

**Richmond, Va.—Railroad.**—It is stated that the Chesapeake & Ohio Railroad Co. proposes making financial arrangements for the further improvement and development of its road, including the making of it a double-track system.

**Richmond, Va.—Railroad.**—The Chesapeake and West Virginia railroad, mention of the application for a charter for which was noted in our last issue, is the Chesapeake, Shenandoah & Western Railroad Co., recently reported. The road is to extend from a point between the Potomac and York rivers to some point on the West Virginia State line. The capital stock authorized is \$10,000,000. Jed Hotchkiss, of Shenandoah, Va., can be addressed.

**Salem, Va.—Railroad.**—J. W. Marshall, A. E. Humphreys and others, of New Castle; J. C. Langhorne and J. W. F. Allemon, of Salem, and others are the incorporators of the Salem & Craig Railroad & Mining Co., reported in last issue as applying for a charter to build a railroad from Salem to some point in Craig county. The capital stock is to be not more than \$5,000,000.

**Salem, Va.—Railroad.**—A. B. Bowman, J. C. Langhorne, T. M. Starkey, George W. Palmer, J. W. Berry and others are the incorporators of the Salem & Southern Railway Co., reported in last issue as applying to the legislature for a charter to build a railroad from some point on the Roanoke & Southern Railroad to Salem. The capital stock authorized is \$500,000.

**Staunton, Va.—Railroad.**—A bill has been introduced in the legislature to incorporate the Atlantic, Staunton & West Virginia Railway Co., with Henry Hutchinson, O. K. Lapham, J. W. Bodley, Reeves Catt, E. C. Vincent and others as incorporators. The company is authorized to build a railroad from some point on the York or Potomac river near the Chesapeake bay to Staunton, and from there to any point on the West Virginia line. The maximum capital stock is \$15,000,000.

**Tallahassee, Ga.—Railroad.**—The Tallapoosa Lumber, Manufacturing & Railroad Co., previously referred to, has commenced the construction of 24 miles of standard gauge road, and expects to extend same to a connection with the Georgia Central system at Roanoke, Ala.

**Texarkana, Ark.—Street Railway.**—David E. Griffin and G. B. Abercrombie, of Shreveport, La., and T. W. Baker, of Dallas, Texas, have submitted a proposition to build the street railway mentioned in last issue. The road is to be a belt line 5 miles long.

**Trinity, Texas.—Railroad.**—Parties are said to be negotiating to purchase the franchise, right of way, etc., of the Trinity, Cameron & Western Railroad, reported in last issue as surveyed from Trinity to Granger, with the intention of building same at once. John M. Hefley, president, can give information.

**Wheeling, W. Va.—Street Railway.**—The stockholders of the Mozart Park Association are said to be considering the construction of a street railway to Mozart Park.

**Weatherford, Texas.—Railroad.**—It is rumored that the Texas & Pacific Railway Co. (office, Dallas) is preparing to build a railroad from Weatherford to Llano.

THE Boston Advertiser says that "a private dispatch announces that Rock Island has completed negotiations for options on valuable terminal properties (\$1,000,000 worth) in Fort Worth and at Dallas, Texas. It is stated that the extension to Fort Worth is to be mainly for the purpose of assuring direct connection with Missouri, Kansas & Texas."

THE contract for two compound pumping engines, boilers, etc., for the North Baltimore (Ohio) Water Works has been awarded to the Laidlaw & Dunn Co., of Cincinnati, Ohio.

## Building Notes.

**Alexandria, Va.—The Mercantile Railway, Building & Loan Association** has been incorporated with T. O. Troy, president, and Lewis Hoof, treasurer.

**Atlanta, Ga.—Exposition Building.**—G. L. Norrman will prepare plans for the erection of a building for the State of Georgia on the Columbian Exposition grounds at Chicago, Ill.

**Barium Springs, N. C.—Orphanage.**—John A. Ramsay has prepared plans for the erection of the orphanage for the Presbyterians, lately reported. The main building is to be of brick, about 100 feet long, with central portion three stories high.

**Beaumont, Texas.—School Building.**—Work will probably soon be commenced on the erection of a building in the Langbeene addition for the South End public school. The mayor can give particulars.

**Bessemer City, N. C.—Contracts** have been awarded for the erection of 8 dwellings.

**Birmingham, Ala.—Office Building, etc.**—Chas. Wheelock has prepared plans for the erection of the building lately reported for J. L. Chalfoux & Co. The building will be used for store, offices and hall purposes. It is to be five stories, 100x100 feet, and will cost about \$85,000. Electric elevators and hot-water heating will be put in.

**Bowie, Texas.—Hall.**—The Masons will, it is stated, erect a three story hall building.

**Bridgeport, Ala.—School Building.**—The erection of a school building to cost \$15,000 is contemplated. The mayor can give information.

**Bruceville, Md.—Depot.**—The contractor for the Western Maryland Railroad Co.'s (office, Baltimore) depot at Bruceville mentioned in last issue is Joseph G. Johnson, of Baltimore.

**Brunswick, Ga.—The Enterprise Building Co.** will build a block of houses.

**Chattanooga, Tenn.—D. B. Loveman & Co.** intend building a five-story and basement building, 60x243 feet, fronting on three streets, at a cost of from \$100,000 to \$125,000. Plans have not yet been perfected.

**Chattanooga, Tenn.—Hunt & Lamm** are preparing plans for the erection in Chattanooga of a four-story stone front building for C. C. Bloomfield, of Jackson, Mich.

**Cloverport, Ky.—As stated** in last issue, Payne & Co. will erect a two-story brick business building 35x100 feet.

**Columbia, S. C.—College.**—The Columbia Female College is to be improved at a cost of \$15,000. F. H. Hyatt can give information.

**Corisana, Texas.—Jail.**—The plans of J. R. Minor have been adopted for the erection of the jail previously reported for Navarro county. It is to be two and three stories high, 60x85 feet, and will cost \$25,000.

**Decatur, Texas.—College.**—The W. A. Cann Architectural Co., of Wichita Falls, has prepared plans for the erection of the building lately reported for the Northwest Texas Baptist College. It is to be three stories, 70x85 feet, and will cost \$25,000. Incandescent electric lighting, steam heating, fire escapes, etc., will be put in.

**Elora, Tenn.—School Building.**—Contract has been awarded for the erection of a two story school building.

**Faith, N. C.—Church.**—J. T. Wyatt reports that contract has been awarded to D. A. Wylie & Co. for the erection of an edifice for the German Reformed Church.

**Florence, S. C.—The Baptists** will probably erect a church to cost \$10,000.

**Heathsville, Va.—Church.**—Rev. W. G. Bates will receive proposals until March 5 for the erection of an edifice for the Methodist Episcopal Church South.

**Hebron, Va.—Jail.**—Contract will probably soon be awarded for rebuilding the Dinwiddie county jail in Hebron at a cost of \$3,000. F. W. Lathrop can give information.

**Houston, Texas.—Church.**—The members of the Antioch Baptist Church contemplate building an edifice 70x70 feet.

**Hudson, S. C.—Hotel.**—W. M. Morris, of Blowing Rock, is reported as to build a hotel in Hudson.

**Nashville, Tenn.—Hotel.**—The Nicholson Hotel Co. has been chartered by A. Y. Stevens, M. J. C. Wrenne, M. S. Combs and others to build the hotel on the site of the Nicholson House, lately reported. The capital stock is \$500,000.

**Nashville, Tenn.—Arrangements** have been made for the erection of 50 houses during this year at Glendale Park. F. W. Hunter & Co. can give particulars.

**New Orleans, La.—The Italo-American Homestead Association** has been incorporated by M. A. Beardone, P. J. Paterno, C. Papini and others. The authorized capital stock is \$5,000,000.

**Newport, Ky.—Charles L. Ralson** will erect a \$5,000 residence.

**Newport News, Va.—Architect Teague** has prepared plans for the erection of a brick block for D. S. Jones to contain five stores.

**Nocona, Texas.—Depot.**—The Missouri, Kansas & Texas Railroad Co. (office, Denison) contemplates building a new depot in Nocona.

**Ocala, Fla.—Church.**—The colored Methodists will build a church to cost \$10,000.

**Paris, Texas.—Church.**—The Baptists contemplate building a church.

**Port Royal, S. C.—Jail.**—The site has been selected for the erection of the jail building lately reported for Beaufort county.

**Radford, Va.—W. J. Kenderdine,** supervising architect and manager of the Radford Land & Improvement Co., is receiving bids for the erection of the 50 dwellings lately reported.

**Richmond, Va.—Hotels.**—The Afro-American Hotel Association, referred to in last issue, is organized to build a hotel in Richmond and one on the Virginia beach for colored people. The capital stock is \$100,000.

**Richmond, Va.—Bank Building.**—The Planters' National Bank contemplates erecting a building.

**Roanoke, Va.—Frank R. May** has, as reported in last issue, contract for erecting a large boarding-house. The building is to be two stories, 48x100 feet, and contain two storerooms and 20 other rooms.

**Salem, Va.—Market house.**—The erection of a market house is contemplated. J. K. Shipman can give information.

**Savannah, Ga.—Armory.**—Bids are being received for the erection of a two story armory building, 60x100 feet, for the Savannah Volunteer Guards. J. H. H. Osborne can give information.

**Savannah, Ga.—The Tidewater Oil Co.** contemplates erecting a building.

**Sheffield, Ala.—Hotel, etc.**—The Habbeler block, which was burned several months ago, is being rebuilt. It is to be a two-story building, the first floor of which is to be for stores and the second for hotel purposes.

**Shelbyville, Ky.—Church.**—Charles Clark, of Louisville, will prepare plans for rebuilding the edifice for the Southern Presbyterian Church, lately burned.

**Suffolk, Va.—Henry Culley** has received contract for the brick work for a number of buildings to be erected by the East Suffolk Land Co.

**Troy, Ala.—Gellerstedt Bros.,** referred to in last issue, intend erecting a business building.

**Union City, Tenn.—Hotel.**—It is reported that B. B. Davis, of Paducah, Ky., has prepared plans for the erection in Union City of a three-story hotel 120x100 feet for J. C. Reynolds, of Jackson. It is to have electric lighting, passenger and freight elevators and hot-water heating. The cost is \$15,500.

**Victoria, Texas.—A. Goldman** has awarded contract for the erection of a brick business building; a stock company will probably be formed to erect a brick business building; C. L. Thurmond, Sr., contemplates erecting a brick store building, and Mrs. Alnoch will, it is stated, erect a two-story brick building.

**Washington, D. C.—City Hall.**—Architect Brady has submitted plans for the erection of the proposed city hall building. The District Commissioners can be addressed for particulars.

**Winchester, Va.—Engine house.**—The Friendship Fire Co. No. 1, referred to in last issue, will shortly commence the erection of a brick and marble engine house.

JUDGING by experts, the Norfolk & Western Railroad Co. has probably secured control of the Lynchburg & Durham Railroad, and if so, the change will doubtless be a very important one for the country through which the latter runs. The Norfolk & Western is a great developer of local business and of whatever country it touches. This new branch into North Carolina can be made a very important aid in the building up of Lynchburg, Durham and other places along the line, and it will at the same time open the way for the Norfolk & Western to reach a section of the South which it has never entered before.

OLIN H. LANDRETH, consulting engineer, Nashville, Tenn., announces that he is now prepared to furnish plans and specifications upon bridge engineering and construction in addition to the special branch of his profession, hydraulic engineering, expert tests and examinations, to which he has given attention. Mr. Landreth is an engineer of long experience and a safe authority to consult.



## Southern Financial News.

## NEW BANKS.

Charleston, S. C.—The Nickel Savings Bank has decided to increase its capital stock to \$25,000.

Dallas, Texas.—The name of the Fourth National Bank has been changed to the State National Bank of Dallas, and the capital stock reduced from \$500,000 to \$400,000.

Detroit, Texas.—The First National Bank of Detroit has, it is stated, been authorized to commence business with a capital stock of \$50,000.

Houston, Texas.—The Planters & Mechanics' National Bank will add a savings department to its business.

Indianola, Miss.—The Sunflower Bank is to be chartered by G. K. Smith, W. G. Phelps, W. S. Hamilton and others.

Mobile, Ala.—The Alabama National Bank, lately referred to, has increased its capital stock from \$150,000 to \$250,000.

Pulaski, Tenn.—The Citizens' National Bank, lately reported as organized with John S. Wilkes, president, and W. L. Abernathy, cashier, has been authorized to commence business. The capital stock is \$60,000.

White Hall, Md.—It is stated that all the stock has been subscribed for the national bank previously reported as being organized by A. E. Hatch, of Baltimore. The capital stock is \$50,000.

Americus, Ga.—The People's National Bank has declared a dividend of 6 per cent.

Atlanta, Ga.—The Atlanta National Building & Loan Association has declared a semi-annual dividend of \$7 per share.

Ballinger, Texas.—The Ballinger Mining Co. has declared a dividend of 20 per cent.

Baltimore, Md.—The Baltimore & Fredericktown Turnpike Railroad Co. has declared a dividend of 1/2 per cent.; Sanitary Pad Co., a dividend of 2 per cent.; Baltimore Dry Dock Co., a dividend of 3 per cent., and the Consolidation Coal Co., a dividend of 2 per cent.

Baltimore, Md.—The banking firm of J. J. Nicholson & Sons has made an assignment to John M. Carter and Matthew K. Aiken. The trustees have given bond for \$500,000, indicating estimated assets of half that amount.

Baltimore, Md.—J. Willcox Brown has negotiated the sale of the \$5,000,000 of common stock of the Baltimore & Ohio Railroad Co. previously mentioned. The purchasers are Blake, Boissevain & Co., of London and Amsterdam; Robert Fleming and E. Cassell, of London, and Vermive & Co., August Belmont & Co. and Kuhn, Loeb & Co., of New York city. The price was, less a commission. The stock will be listed in New York and London.

Baltimore, Md.—The American National Loan & Savings Association has been incorporated by James McDonough, D. M. Reese, J. L. Farmer and others. The capital stock is \$500,000.

Baton Rouge, La.—The First National Bank has declared a semi-annual dividend of \$4 per share.

Bel Air, Md.—The Harford National Bank has declared a semi-annual dividend of 5 per cent., and the Second National Bank a dividend of 3 per cent.

Birmingham, Ala.—The Prattville Cotton Mills has declared a semi-annual dividend of 10 per cent.

Bristol, Tenn.—The National Bank of Bristol has declared a dividend of 6 per cent.

Brunswick, Ga.—The Brunswick Savings & Trust Co. declared a semi-annual dividend of 3 1/2 per cent.

Charleston, S. C.—The Palmetto Brewing Co. has declared an annual dividend of 10 per cent.

Charleston, S. C.—A new plan brought forward for the reorganization of the South Carolina Railway Co. provides for an assessment of 10 per cent. on the income bonds and stock, for which new second mortgage 6 per cent. 20-year gold bonds, new first preferred cumulative stock, second preferred and common stocks will be issued. No mortgage can be placed ahead of the new first preferred unless it is included. The present first mortgage bonds will be paid off if arrangements can be made. The reorganization committee reserves the right in such case to substitute therefor a consolidated first mortgage at 5 per cent., to be limited in amount to \$7,000,000, the existing first and second mortgage bonds to be paid off in cash, principal and interest. Holders of securities of this company have been requested to deposit same with the New York Security & Trust Co. on or before February 8.

Charleston, W. Va.—The Metropolitan Fire Insurance Co. has been chartered by E. L. Ackermann and others of New York City. The authorized capital stock is \$100,000.

Charlottesville, Va.—The Monticello Wine Co. has declared an annual dividend of 9 per cent.; Charlottesville Woolen Mill, a dividend of 7 per cent., and the Charlottesville Perpetual Building & Loan Association a semi-annual dividend of 7 per cent.

Chattanooga, Tenn.—The Penny Savings Bank has declared a dividend of 10 per cent.

Cheraw, S. C.—The Bank of Cheraw has declared a semi-annual dividend of 4 per cent.

Chickamauga, Ga.—The Crawfish Springs Land Co. has, it is stated, placed \$1,000,000 of its bonds in New York.

Cloverport, Ky.—The Hancock Deposit Bank has declared a semi-annual dividend of 4 per cent.

Covington, Va.—A bill has been introduced in the legislature authorizing the town to issue bonds not exceeding \$10,000 in amount for sewer and paving purposes. They are to be 30-year 6 per cent. bonds. The mayor can be addressed.

Covington, Va.—The Covington National Bank has declared a dividend of 3 per cent.

Dayton, Tenn.—The First National Bank has declared a dividend of 9 per cent.

Elizabethtown, Ky.—The First National Bank has declared a semi-annual dividend of 3 per cent.

Fayetteville, N. C.—The Bank of Fayetteville has declared a semi-annual dividend of 4 per cent.

Florence, S. C.—The Bank of Florence has declared a dividend of 5 per cent.

Fort Worth, Texas.—The city has disposed of \$175,000 of 6 per cent. bonds and \$700,000 of 5 per cent. water works bonds. Blair & Co., of New York, are said to be the purchasers.

Frostburg, Md.—The First National Bank has declared a semi-annual dividend of 3 per cent.

Georgetown, Ky.—The Georgetown Street Railway Co. has declared a semi-annual dividend of 4 per cent.

Grafton, W. Va.—The First National Bank has declared a dividend of 5 per cent.

Houston, Texas.—The South Texas National Bank has declared a dividend of 3 per cent.

Huntington, W. Va.—The First National Bank has declared a semi-annual dividend of 5 per cent.

Huntsville, Ala.—The board of mayor and aldermen will receive proposals until February 20 for \$20,000 of 5 per cent. gold bonds of the denomination of \$1,000 each.

Huntsville, Ala.—The Huntsville Loan & Investment Co. has been organized by A. D. Davis, of Chicago, Ill.; L. S. Cook, of St. Paul, Minn., and O. C. Cole, of Tennessee.

La Grange, Ga.—The La Grange Banking & Trust Co. has declared a semi-annual dividend of 5 per cent.

Lexington, Va.—The Bank of Lexington has declared a semi-annual dividend of 5 per cent.

Little Rock, Ark.—The Kansas, Arkansas & New Orleans Railroad Co. has filed a mortgage in favor of the Farmers' Loan & Trust Co., of New York, for \$6,000,000, to be used in railroad construction.

Little Rock, Ark.—The First National Bank and the Exchange National Bank have each paid a semi-annual dividend of 4 per cent.

Louisville, Ky.—The Du Pont Paper Mill Co. will issue \$50,000 of 3 to 6 per cent. bonds and \$70,000 of cumulative income bonds bearing interest at 6 per cent.

Louisville, Ky.—The Kentucky Trust Co. will, it is stated, increase its capital stock to \$500,000.

Louisville, Ky.—The Louisville Gas Co. has declared a semi-annual dividend of 3 1/2 per cent.

Macon, Ga.—The Southern Phosphate Works has declared a dividend of 10 per cent.

Memphis, Tenn.—The Hernando Insurance Co. and the Memphis Grocery Co. have each declared a semi-annual dividend of 5 per cent.

Nashville, Tenn.—A bill has been introduced in the city council authorizing the issuance of \$160,000 of bonds for widening and paving Deaderick street.

Nashville, Tenn.—The Phillips-Buttort Manufacturing Co. will pay a dividend of 5 per cent.

Newnan, Ga.—The Newnan National Bank has declared a semi-annual dividend of 3 per cent.

New Orleans, La.—The Orleans Manufacturing Co. has declared dividend of 6 per cent., and the Home Insurance Co. a semi-annual dividend of 4 per cent.

Newport, Ky.—The American Society for the Protection of Legal Rights has been incorporated, with its principal office in Newport and branches in New York and London, Eng. The capital stock is \$1,000,000. The Employers & Proprietors' Protection Liability Association and the Anglo-American Finance, Trust & Guarantee Co., Limited, have also been chartered.

Norfolk, Va.—The Norfolk Real Estate Investment Co. has declared a semi-annual dividend of 5 per cent.

Pineville, Ky.—The First National Bank has declared a semi-annual dividend of 4 per cent.

Port Deposit, Md.—The Cecil National Bank has declared a semi-annual dividend of 6 per cent.

Richmond, Va.—The Chesapeake & Ohio Railroad Co., recently reported as applying to the legislature for authority to issue additional bonds and stocks, proposes, it is stated, to issue 4 1/2 per cent. consolidated bonds of an amount sufficient to provide for future needs and to retire the present issues of bonds and preferred stock. It

is also contemplated to issue \$13,000,000 of new common stock. The first preferred stock is to get two-thirds of its face in the new 4 1/2 per cent. bonds and one-third in new common stock, and the second preferred stock one-third of its face in bonds and two-thirds in new common stock. It is understood that no formal action on the propositions has yet been taken.

Richmond, Va.—Bills have been introduced in the legislature to charter the Virginia Guarantee Loan Co. with L. C. Berkly, Jr., L. E. Harvie, J. L. Waring, J. P. Harrison and others as corporators, and the Virginia Land & Investment Co. with R. C. Marshall, A. P. Thorn, G. B. Finch and others as corporators.

Richmond, Va.—The authorized capital stock of the Virginia Mercantile & Safe Deposit Co., reported in last issue as organized, is \$1,000,000. The company was formed under a charter granted by the State legislature.

Shreveport, La.—The Shreveport Fire Insurance Co. is paying a dividend of 50 per cent. on account of the capital stock returned.

Statesville, N. C.—The First National Bank has declared a semi-annual dividend of 4 per cent.

Sumter, S. C.—The Sumter National Bank and the Bank of Sumter have each paid a quarterly dividend of 4 per cent.

Thomasville, Ga.—The Thomasville National Bank has declared a semi-annual dividend of 3 1/2 per cent.

Vanceburg, Ky.—It is announced that the Deposit Bank of Vanceburg has closed its doors owing to a disagreement among the officials as to its management.

Waco, Texas.—The Waco Savings Bank has declared a dividend of 12 per cent., and the Central City Trust Co. a semi-annual dividend of 5 per cent.

Wheeling, W. Va.—The finance committee of the board of Ohio county commissioners has disposed of the \$100,000 of 5 3/4 per cent. bonds, lately mentioned. The Wheeling Bridge & Terminal Railway Co. purchased \$85,500 of the bonds at par and accrued interest.

Wheeling, W. Va.—The German Fire Insurance Co. has declared a dividend of 5 per cent.

Winston, N. C.—The People's National Bank has declared a semi-annual dividend of 3 per cent.; the First National Bank and the Wachovia National Bank, semi-annual dividends of 5 per cent. each.

## An Extensive Pyrites Property in the Carolinas.

Nearly two years ago the MANUFACTURERS' RECORD published a series of special articles by Mr. W. H. Adams, M. E., who had been long identified with the extensive pyrites-mining operations near Mineral City, Va., upon the great importance of developing pyrites mining and the manufacture of sulphuric acid in the South from pyrites. For the acid needed in manufacturing fertilizers the South was largely dependent upon imported brimstone and pyrites, whereas, as shown by Mr. Adams, no more inviting field for capital could be asked than the development of a first-class pyrites property, when such could be found, and the manufacture of sulphuric acid. These articles, coming from such a recognized authority, attracted great attention and stimulated the search for pyrites ores. One direct result showing what the MANUFACTURERS' RECORD is doing for the South is seen in the full report given in this issue of the Carolina Sulphuric Acid Manufacturing Co., organized to develop what seems to be the greatest pyrites property ever discovered, and to erect at Blacksburg, S. C., large sulphuric acid works. The first reports that came to the MANUFACTURERS' RECORD about this pyrites property seemed to be so extravagant, although we knew that they were made in good faith and based on investigations, that it was difficult to accept them. In view, however, of the very elabo-

rate report afterwards made by Dr. J. Shearson Hyland, M. E., Ph. D., A. M., and published in this issue, it seems that the reports which we first heard did not begin to tell the full magnitude of this property. Dr. Hyland came to this country a year or more ago, and has been quietly making some investigations in the South for English clients. He was formerly of Her Majesty's geological survey of the United Kingdom. He is a man of rare scientific attainments, and is withal eminently practical, his scientific knowledge having been supplemented by a wide range of experience and work in Great Britain and on the Continent. He is extremely conservative, and a favorable report from him means a great deal.

THE Messenger, of Bessemer City, N. C., says: "The Bessemer City Mining Co. is mining high-grade Bessemer ores at four of their mines, and the capacity of the machinery now in operation is from 100 to 140 tons per day. This ore is being shipped to Virginia, Maryland and Alabama. This speaks volumes for Bessemer City."

## JOHN L. WILLIAMS &amp; SON, BANKERS,

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## Richmond Stock Exchange Quotations.

Reported by JOHN L. WILLIAMS & SON, Bankers, Richmond.

| RICHMOND, VA., January 19, 1892.            |           |
|---|-----------|
| BID.  | ASKED.    |
| North Carolina 4's, 1910.....               | 97 3/4 98 |
| North Carolina 6's, 1919.....               | 122 125   |
| Virginia New 3's, 1932.....                 | 71 71 1/2 |
| Danville 5's.....                           | 99 ..     |
| Lynchburg, Va., 5's, 1915.....              | 102 ..    |
| Petersburg, Va., 5's, 1915.....             | 102 ..    |
| Norfolk, Va., 5's, 1911.....                | 102 ..    |
| Richmond, Va., 5's, 1922.....               | 108 ..    |
| Atlanta & Charlotte Ky., 1st 7's, 1907..... | 118 ..    |
| Atlanta & Charlotte G'd 6's, 1900.....      | 99 102    |
| Char., Col. & Aug. R.R. Gen. 6's, 1932..... | 98 102    |
| Georgia Pacific Ry. 1st 6's, 1922.....      | 101 102   |
| Georgia Pacific 2d 5's, 1923.....           | 62 65     |
| Ga. Pacific Incomes, 5's.....               | 17 19     |
| Petersburg Railroad Stock.....              | 75 80     |
| Petersburg Railroad Class A 5's, 1926.....  | 102 109   |
| Petersburg Railroad Class B 5's, 1926.....  | 107 110   |
| Rich. & Danville R. R. Gold 6's, 1915.....  | 110 ..    |
| West. N. Car. R. R. G'd 6's, 1914.....      | 91 98     |
| West. N. Car. 1st 6's, C. 1914.....         | 88 94     |
| Northwestern N. Car. R. R. 1st 6's.....     | 89 91     |
| Atlanta & Charlotte R. R. Stock.....        | 89 ..     |
| North Carolina Railroad Stock.....          | 100 ..    |
| R. F. & Pot. R.R. Div'd Obligations.....    | 112 113   |
| Virginia Midland Railway Stock.....         | .. ..     |
| Sloss Iron & Steel Co. Stock.....           | 21 35     |
| Sloss Iron & Steel Co. 1st 6's, 1917.....   | 88 90     |
| Sloss Iron & Steel Co. 2d 6's, 1918.....    | 63 65     |

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## PROPOSALS.

## MAYOR'S OFFICE.

**GREENSBORO, N. C., Oct. 22, 1891.**  
The undersigned will receive sealed bids for **LIGHTING THE CITY OF GREENSBORO, N. C., WITH ELECTRICITY** from and after the 15th day of April, 1892. Bids to be made upon an estimate of not less than 50 arc lights of 1,500 candle-power each, or with incandescent lights of equal lighting capacity. Proposals are solicited, and it is desired that each shall contain an offer to light by the moon calendar, and also an offer to light all night. Bids will be opened on February 1st, 1892. All bids must be addressed to Jas. W. Forbis, Mayor, Greensboro, N. C. The city reserves the right to reject any and all bids.  
JAS. W. FORBIS,  
Mayor, City of Greensboro.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 9th day of February, 1892, for all the labor and materials required for putting in place complete, the Low-Pressure, Return-Circulation Steam-Heating and Ventilating Apparatus for the U. S. Custom-House and Postoffice Building at Eastport, Maine, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Eastport, Maine. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements and meaning of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Custom-House and Postoffice Building at Eastport, Maine," and addressed to W. J. EDBROOKE, Supervising Architect, January 11, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 9th day of February, 1892, for all the labor and materials required for putting in place complete the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Courthouse and Postoffice Building at Statesville, N. C., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Custodian at Statesville, N. C. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements and meaning of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Courthouse and Postoffice Building at Statesville, N. C.," and addressed to W. J. EDBROOKE, Supervising Architect, January 11th, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 10th day of February, 1892, for all the labor and materials required for putting in place complete the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the United States Postoffice, &c., Building at Portsmouth, Ohio, in accordance with drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at Portsmouth, Ohio. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements and meaning of this invitation, or upon any heating and ventilating apparatus not satisfactory to this Department. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Low-Pressure, Return-Circulation, Steam-Heating and Ventilating Apparatus for the U. S. Postoffice Building at Portsmouth, Ohio," and addressed to W. J. EDBROOKE, Supervising Architect, January 14th, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 5th day of February, 1892, for all the labor and materials required for the trench excavation, concrete and stone foundations, stone masonry, cut stone and brick work of the basement and area walls, first floor and basement beams and girders, basement columns, &c., for the United States Courthouse Custom-house and Postoffice at Omaha, Nebraska, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent. Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Trench Excavations, Basement and Area Walls, Iron Beams, Columns, &c., for the United States Courthouse Custom-house and Postoffice at Omaha, Nebraska," and addressed to W. J. EDBROOKE, Supervising Architect, January 8, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 9th day of February, 1892, for all the labor and materials required for the Excavation, Concrete, Stone Masonry, Cut Stone Work and Brick Work, Iron and Wood Floor and Roof Construction, Roof Covering, Approaches, &c., for the U. S. Postoffice, Custom-house, &c., at Jacksonville, Florida, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Jacksonville, Florida. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for the Excavation, Concrete, Stone Masonry, Cut Stone Work and Brick Work, Iron and Wood Floor and Roof Construction, Roof Covering, Approaches, &c., for the U. S. Postoffice, Custom-house, &c., at Jacksonville, Florida," and addressed to W. J. EDBROOKE, Supervising Architect, January 9, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 15th day of February, 1892, for furnishing all the labor and materials required to lay complete the Sewer from the U. S. Postoffice, Courthouse, &c., Building at Baltimore, Md., to Jones's Falls, in accordance with the drawing and specification, copies of which may be had at this office or the office of the Custodian at Baltimore, Md. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Sewer from the U. S. Postoffice, Courthouse, &c., Building at Baltimore, Md." and addressed to W. J. EDBROOKE, Supervising Architect, January 16, 1892.

**SEALED PROPOSALS** will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 16th day of February, 1892, for all the labor and materials required for the Approaches to the U. S. Courthouse, Postoffice, &c., Building at Denver, Colorado, in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent at Denver, Colorado. Each bid must be accompanied by a certified check for a sum not less than 2% of the amount of the proposal. The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements of this invitation. Proposals must be enclosed in envelopes, sealed and marked "Proposal for Approaches to the U. S. Courthouse, Postoffice, &c. at Denver, Colorado," and addressed to W. J. EDBROOKE, Supervising Architect, January 15, 1892.

## SOUTHERN BANKS.

Below is published a list of Banks and Bankers in the Southern States, whom the MANUFACTURERS' RECORD commends to its readers:

## GEORGIA.

**AUGUSTA—Georgia Railroad & Banking Co.,** Chas. H. Phinizy, President. Capital \$4,200,000.

**MACON—American National Bank,** Wm. H. Burden, President. Capital \$250,000.

**MACON—Exchange Bank,** H. J. Lamar, President; J. W. Cabaniss, Cashier. Capital and surplus \$550,000.

**MACON—First National Bank,** J. C. Plant, President. Capital and surplus \$250,000.

## SOUTH CAROLINA.

**COLUMBIA—Carolina National Bank,** W. A. Clark, President. Capital \$100,000.

## VIRGINIA.

**BUENA VISTA—Buena Vista Loan & Trust Co.,** C. B. Guyer, Pres. Capital \$100,000.

## WANTS.

**WANTED** To correspond with a PRACTICAL COTTON MILL MAN who can furnish a few thousand dollars along with service as SUPERINTENDENT of a small plant yet to be built. Address G. R. CRANE, Tallahassee, Fla.

**WANTED—POSITION** as SUPERINTENDENT OF MACHINERY by a thoroughly competent Hydraulic and Mechanical Engineer. Ten years' experience building and operating Hydraulic Compresses, Steam Engines and Locomotives. Can handle men to best advantage. Best of references. O. J. MORRIS, Opelika, Ala.

## PARTNER WANTED

To take an interest in BRICK WORKS equipped with Quaker and Penfield Machines and Shaver Dryer. Must be experienced and competent to carry on the manufacture of common, pressed and ornamental brick and drain tile, while advertiser looks after the financial part of the business. Works located in North Alabama. Clay suitable for red, white, buff or chocolate brick. References exchanged. Address

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NEW MACHINE SHOPS

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Main Floor—age, 200 feet, 90 feet deep.  
Machine Shop proper, 175x47 feet.  
Pattern Rooms, 133x40 feet.  
Tool Room, 18x26 feet.  
Boiler-House, with 80 H. P. boiler, 15x20 feet.  
Foundry Building, 101x58 feet.  
Core Oven, 13x20 feet.  
Blacksmith Shop, 23x25 feet.  
Cupola, 16x16 feet.  
New Blower Steam Hammer, crane on place.  
Other New Machinery engaged. Desired to combine with parties who will stock with machinery and operate it. Specially erected for the manufacture of Engines, but well adapted for the manufacture of anything requiring the material's above named. Three through line trunk railways offer the best distributing facilities in the State. Address

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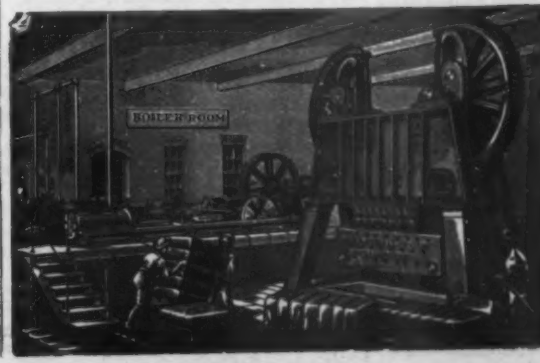
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# CONSTRUCTION DEPARTMENT.

**WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.**

\*Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

## ALABAMA.

Anniston—Pipe Works.—The Radford Pipe & Foundry Co. has completed arrangements for putting in three new cranes and otherwise improving the Anniston Pipe Works.

Birmingham—Chewing-gum Factory.—A. L. Wilson, of Mobile, is reported as to start the manufacture of chewing gum in Birmingham.

Birmingham—Cotton-gin Works.—Charles Wheelock & Son have prepared plans for the building of the Northington-Munger-Pratt Co.'s cotton-gin works, lately reported. The main building will be 110x200 feet, the foundry building 50x100 feet, and will have boiler and engine-room attached.

Birmingham—Hardware.—The May Thomas Hardware Co. has increased its capital stock from \$15,000 to \$50,000.

Boiling—Saw Mill.—Milner, Caldwell & Flower will put new machinery in their saw mill, reported last week as damaged by an explosion.

Cuba Station—Saw Mill and Timber Land.—Mr. Brosier, of Indiana, is reported as having purchased 900 acres of timber land in Greene county and as to lease the saw mill of Martin & Walker, at Cuba, for the development of same.

Huntsville—Cottonseed-oil Mill.—M. J. O'Shaughnessy, of Huntsville; O. O. Nelson, of Montgomery, and J. M. Baker, of Selma, have incorporated the Alabama Cotton Oil Co. The capital stock is \$500,000.

Huntsville—Improvement Company.—The Northwestern Land Association, of Pierre, S. D., has purchased the properties of the North Alabama Improvement Co., including 1,800 acres of land in and around Huntsville, the Huntsville and Monte Sano Hotels, etc. The officers of the association are W. S. Wells, president; T. W. Pratte, vice-president, and W. J. Wellman, secretary, all of Pierre, S. D.

Trussville—Rock Quarry.—R. D. Smith is reported as to operate a rock quarry in connection with the Trussville iron furnace.

## ARKANSAS.

Batesville—Electric-light Plant and Water Works.—J. E. Hart has, it is stated, received contract for the erection of the electric-light plant and construction of the water works lately mentioned.

De Witt—Brick Works.—The De Witt Brick Co. has been incorporated by James A. Gibson (president), A. D. Matthews, B. U. Word and J. W. Crockett.

Helena—Artesian Wells.—The Cook Well Co. received, it is stated, the contract for the sinking of the artesian wells for the Helena Water Works Co., lately reported.

Little Rock—Publishing.—The Arkansas Echo Publishing Co. has been incorporated with John Kaufman, president; Andrew Rust, vice-president, and Adolph Arnold, secretary, for the publication of a German newspaper.

Little Rock—Land.—The Ferguson Land Co. has been incorporated with C. E. Ferguson as president; A. Ferguson, vice-president, and W. B. Ferguson, secretary. The capital stock is \$5,000.

Little Rock—Saw Mill and Sandstone Quarry.—Fred. Hanger will develop a sandstone quarry and erect a saw mill.\*

Lonoke—Cotton Gin and Saw Mill.—E. D. Seaton will erect a saw mill and probably a cotton gin also at Seaton.\*

Pine Bluff—Shoe Company.—The Atkinson Shoe Co. has been incorporated with J. G. Atkinson, president; E. J. Atkinson, vice-president, and H. H. Atkinson, secretary. The capital stock is \$15,000.

Rover—Gold Mines.—Monroe Bottoms, of Russellville, and others will develop gold deposits near Rover.

## FLORIDA.

Acme—Phosphate Plant.—The Massachusetts Phosphate Co. is erecting a phosphate plant near Acme, as lately reported.

Apalachicola—Saw Mill.—The Cypress Lumber Co. is reported as having put new machinery in its saw mill.

Fort White—Phosphate Mines.—Potter & Perrin, lately mentioned as having purchased the Soosmith phosphate mines near Fort White, have organized the Fort White Phosphate Co. with a capital stock of \$500,000 for the development of same.

Indian Springs—Construction Company.—John O. Bronson, Albert Mathews and W. W. Walker have incorporated the New York Construction Co. to construct bridges, railroads, etc. The capital stock is \$150,000. This company will also have an office in New York.

Jacksonville—Lumber Mill.—O. Comstock, of Cadillac, Mich., is reported as to erect a lumber mill in Jacksonville.

Magnolia Springs—Bottling Works.—Henry R. Neale, of Boston, Mass., is reported as having rebuilt and put in operation the Mammoth Springs bottling works previously burned.

## GEORGIA.

Athens—Water Works.—The city will possibly hold an election to consider the issuance of \$100,000 of bonds to construct a new water works system. For further information address the mayor.

Atlanta—Phosphate Mines.—John J. Lee, T. B. Neal, C. A. Evans and others have organized the Atlanta Phosphate & Mining Co. for the development of phosphate mines. The capital stock is \$187,500.

Atlanta—Glass Factory.—The Atlanta Glass Co. will rebuild its glass factory lately burned, as stated last week.

Augusta—Drug, etc., Factory.—George J. Howard, N. L. Willet, T. G. Howard and Robert H. Land have incorporated the Howard-Willet Drug Co. to manufacture drugs, medicines, paints, etc. The capital stock is to be not less than \$50,000 nor more than \$100,000.

Augusta—Glass Factory.—The Augusta Glass Works will, it is stated, increase its capital stock by the issuance of \$25,000 of preferred stock.

Brunswick—Lumber Mill.—Smith & Brown are reported as having purchased a half interest in the Altamaha Cypress Lumber Co. for \$60,000.

Eatonton—Land Company.—The Middle Georgia Land Co. is being organized.

Griffin—Carriage Works.—J. G. Smith has purchased, as stated last week, the Griffin Carriage Works and will operate same.

Macon—Cracker, etc., Factory.—The Winn-Johnson Co., reported last week as incorporated to manufacture crackers, candies, etc., has purchased and will operate the factory of Winn, Johnson & Co.

Mount Vernon—Saw Mill.—W. H. Clements is reported as having purchased the saw mill of Smith & Goff, at Erick.

Savannah—Oyster Cultivation.—The Vernon Oyster Co. has been organized to cultivate oysters.

Savannah—Fence Company.—The Savannah Hedge Fence Co. has been organized with C. H. Way, president; W. W. Starr, vice-president, and Mord Abrams, secretary. Its purpose is to extend the osage orange plant as a hedge.

Tallahassee—Saw Mill.—The Tallahassee Lumber Manufacturing & Railroad Co. has, as recently reported, purchased the saw mill of the Chippewa Lumber Co., of Chippewa Lake, Mich., and will remove it to Tallahassee for operation.

## KENTUCKY.

Georgetown—Tobacco Factory.—The Old Kentucky Tobacco Co. has been incorporated with K. Stone, president; T. J. Barkley, vice-president, and J. E. Barkley, secretary, to operate the tobacco factory lately mentioned.

Godman—Saw Mill.—C. T. Paris & Co. (address Big Clifty) will put a hoop machine in their saw mill.\*

Grand Rivers—Iron Furnaces.—The Grand Rivers Furnace Co. has just put its two charcoal iron furnaces in blast; the plant has a capacity of 150 to 200 tons daily.

Henderson—Machine Shops.—The Newport News & Mississippi Valley Railway Co. (office, New Haven, Conn.) will, it is stated, remove its machine shops for the Ohio Valley Division from De Koven to Henderson.

Kentucky—Oil Wells.—Kellogg & James, representing New York capitalists, are preparing to sink coal-oil wells near Panola Station.

Kentucky—Stock Farm.—It is rumored that a syndicate of Chicago (Ill.) parties will purchase 7,000 acres of land in Kentucky and establish an extensive stock farm.

Lexington—Manufacturing.—W. D. Doyle and J. T. Hodge have incorporated the Charles Marvin Stock Food Co. to manufacture horse and cattle food. The capital stock is \$50,000.

Louisville—Lumber and Stave Mill.—F. E. Proctor, Charles Troutman, J. C. Burbage and others have incorporated the Hardwood Lumber & Stave Co. with a capital stock of \$50,000.

Louisville—Cigar and Cheroot Factory.—Thomas Gracey & Co., of Richmond, Va., referred to lately, will remove their cigar and cheroot factory to Louisville.

Maysville—Tobacco Factory.—J. H. Rains & Sons are reported as to double the capacity of their tobacco factory.

Melbourne—Factory.—John Miller & Co. are reported as having recently erected a new factory building.

Newport—Gas Works.—Charles Robson, J. M. Potter, P. W. Hardin and others have incorporated the Harris Gas Co. to erect and operate gas works, etc. The capital stock is \$5,000,000.

Smallhouse—Grist and Saw Mill.—Miles Bros. are erecting a grist and saw mill.\*

Springville—Paint Mill.—M. H. Miller and others are reported as having let contract for the erection of a paint mill.

## LOUISIANA.

Alexandria—Electric-light Plant and Water Works.—The city has accepted the proposition, mentioned last week, of J. G. Couillard, Welch and Marye for the establishment of an electric-light plant and a water works system. The mayor can give information.

Alexandria—Saw Mill.—Julius Levin is reported as having plans prepared for the erection at Levin station of a saw mill with a capacity of 40,000 feet of lumber per day.

Alexandria—Saw Mill.—C. E. Roberts and others contemplate the erection of a saw mill with a daily capacity of 75,000 feet of lumber, in the Keystone addition.

Berwick—Sugar Mill.—J. N. Pharr has let contract for a complete sugar-mill plant, consisting of two 3-roller mills, engine, gearing, etc., for his Loisel plantation.

New Iberia—Shingle Mill.—John and James Gebert are reported as to erect a shingle mill.

New Orleans—Brick and Terra-cotta Works.—The city council has granted permission to Charles Durieux for the erection and operation of the brick and terra-cotta works lately mentioned.

New Orleans—Vinegar Factory.—The Southern Vinegar Co., Limited, has been incorporated with L. P. Washburn, president, and J. T. Purvis, secretary, to manufacture vinegar. The capital stock is \$10,000.

Plaquemine—Water Works.—The Plaquemine Water Works Co., previously reported as organized to construct a system of water works, has been incorporated. David Altemus is secretary; capital stock, \$10,000.

## MARYLAND.

Baltimore—Electric light and Power Plant.—The Maryland Electric Light & Power Co., lately reported as chartered, has among its incorporators William J. Dickey, S. J. Van Lill, W. H. Harken and others. The capital stock is \$50,000.

Baltimore—Fruit Company.—C. C. Buckman and G. S. Roberts, I. C. Young, of Massachusetts, and others have incorporated the Buckman Fruit Co., with a capital stock of \$50,000. Its purpose is the importation of fruit from the West Indies.

Baltimore—Publishing.—C. H. Grasty, Julian Riggs and others, recently mentioned as having purchased the Evening News, have incorporated the Evening News Publishing Co. to publish same. The capital stock is \$200,000.

Baltimore—Barrel, etc., Factory.—Jacob S. Rosenthal, S. G. B. Cook, F. H. Gottlieb and others have incorporated the Campbell Barrel Machine Co. for the manufacture of barrels, kegs, etc., using the special machinery patented by Henry Campbell. The capital stock is \$100,000.

Baltimore—Manufacturing.—J. I. Vogeler, G. W. Thomas, T. M. Dukehart and others have incorporated the Thomas Manufacturing Co. to manufacture druggists' and grocers' specialties. The capital stock is \$10,000.

Baltimore—Nursery Company.—Samuel C. Kent, of Chester county, Pa.; Franklin, Howard, Davis and others have incorporated the Franklin Davis Nursery Co. with a capital stock of \$100,000.

Burkittsville—Distillery.—J. D. Ahalt is putting new machinery in to increase the capacity of his distillery.\*

Cumberland—Brewery.—The Cumberland Brewing Co. has erected an additional building, as reported lately, thus increasing its storage capacity.

Cumberland—Ice Factory.—The Cumberland Ice Manufacturing Co. has been organized by George Schwarzenbach (president), Lloyd Lowndes, A. D. Loden and others, for the manufacture of ice. The capital stock is \$30,000.

Cumberland—Spring Factory.—The Lehigh Spring Co., of Lehigh, Pa., has, it is stated, made arrangements for the establishment of a branch factory in Cumberland for the manufacture of railroad and spiral springs.

Easton—Washing-machine Factory.—Lewis Whitehouse, J. C. Mullikin and W. P. Chaffinch have incorporated the Crystal Washer Co. to manufacture washing machines.

Hagerstown—Biscuit Factory.—John Spielman has purchased the Hagerstown biscuit factory for \$6,700; will probably operate same.

Manchester—Cigar Factory.—Charles J. Ganter is reported as to establish a cigar factory.

## MISSISSIPPI.

Garner—Cotton Gin.—J. H. Dogan will rebuild his cotton gin reported last week as burned.\*

## NORTH CAROLINA.

Bessemer City—Grist and Saw Mill, etc.—Pearson & Huffstetter are reported as to erect a cotton gin, grist mill and saw mill.

Elizabeth City—Electric light Plant.—A representative of an electric light company is investigating with a view of organizing a stock company for the erection of an electric-light plant in Elizabeth City.

Marion—Wood-alcohol Plant.—Newark (N. J.) capitalists have located a site at Marion for a wood-alcohol plant. Work on building will probably be commenced within 60 days. John Yancey, Jr., can give information.

Monroe—Electric-light Plant, etc.—The Monroe Cotton Mill will, it is stated, put in an electric-light plant; also double the capacity of its cotton mill.

Mount Airy—Tobacco Factory.—J. H. and B. F. Sparger are reported as erecting a new building six stories in height and 52x178 feet for their tobacco factory.

Raleigh—Ice Factory.—Baer & Son, of Charleston, S. C., are reported as having purchased the Plate Ice factory at Raleigh and as to expend \$10,000 in improving and putting same into operation.

Salem—Tobacco Factory.—W. W. Wood & Co. let contract for the erection of a tobacco factory, as previously reported. It is now in course of erection.

Spout Springs—Saw and Planing Mill and Timber Land.—J. Y. Gossett, of Philadelphia, Pa., and R. W. Hicks, of Wilmington, have purchased the Spout Springs saw and planing mill and timber land property, as reported last week. For the purpose of operating the mill and developing the timber they have organized the Consolidated Lumber Co. with a capital stock of \$38,000. Mr. Gossett is president; J. C. McRae, vice-president, and H. McD. Robinson, secretary.

Taylorsville—Tobacco Factory.—The organization of a stock company for the establishment of a tobacco factory is talked of.

Thomasville—Smelting Plant.—The North Carolina Smelting Co., of New Jersey, has been incorporated recently with a capital stock of \$1,000,000 and purchased the works of the North Carolina Smelting Co., of North Carolina, at Thomasville.

Wilmington—Saw and Planing Mill.—The Peregrine Lumber Co., previously reported (under Halifax) as incorporated, has purchased the Cornelius Harnett property at Hilton from W. H. Griffin and T. M. Lanahan, of Baltimore, Md., and will erect a saw and planing mill on same. The principal office of this company is at Baltimore, Md.

## SOUTH CAROLINA.

Belton—Oil Mill.—The Belton Oil Mill Co. hopes soon to capitalize its mill and resume operations.

Blacksburg—Pyrites Mines and Sulphuric-acid Works.—The Carolina Sulphuric Acid Manufacturing Co., recently reported as incorporated, has organized with John F. Jones, president; T. H. B. Haase, vice-president, and T. B. Gautier, treasurer. The company will develop pyrites mines and erect sulphuric-acid works at Blacksburg; capital stock \$1,000,000.

Charleston—Brewery.—The Palmetto Brewing Co. will rebuild its brewery, reported in this issue as burned.

Charleston—Fertilizer Manufacturing, Phosphate Mining, etc.—The American Land Improvement & Manufacturing Co. is to be chartered with a capital stock of \$500,000 (with privilege of increasing to \$2,000,000) to deal in lands, mine phosphate rock, manufacture fertilizers, etc.; factory to be erected probably at Jacksonboro. Julian Fishburne will, it is said, be president of the company.

Charleston—Wheelbarrow Factory.—C. G. Memminger intends to start a wheelbarrow factory.\*



**Charleston—Wharves.**—Northern capitalists have, as lately reported, purchased the Vanderhorst and Commercial wharf properties. The property will be managed by W. E. Huger, C. W. Towles and H. A. W. South.

**Columbia—Plating Works.**—D. A. Childs has, it is stated, put new machinery in and greatly enlarged his plating works.

**Greenville—Cotton Mill.**—The Huguenot Mills will put in new machinery, as stated last week; will consist of boiler, engine and carding machinery.

**Greenwood—Co-operative Company.**—J. K. and W. L. Durst, J. A. Marshall and others have incorporated Durst & Co.'s Co-operative Store with a capital stock of \$50,000.

**Hartsville—Pulp Mill.**—New machinery is reported as to be put in the Hartsville Pulp Mill.

**Langley—Kaolin Mines.**—The T. G. Lamar Kaolin Co., reported lately as incorporated, at present only ships the crude material, but later on will probably put up machinery.

**Yorkville—Pyrites Mines and Sulphuric-acid Works.**—The Nannie Mountain Acid & Mining Co. has been incorporated with James F. Hart, of Yorkville, president; A. E. Wemple, of New York, secretary, and J. G. McNulty, also of New York, superintendent. The company's purpose is to mine pyrites and manufacture sulphuric acid in York county. Its capital stock is \$300,000.

#### TENNESSEE.

**Bridgeport—Electric-light Plant.**—The Bridgeport Lumber Co. is reported as to establish an electric-light plant to supply its mills and the city.

**Bristol—Creamery.**—The Bristol Butter & Cheese Co. has been incorporated with L. H. Copenhaver, president; J. H. Rutherford, vice-president, and G. P. Cannon, secretary, for the purpose of erecting a creamery. The capital stock is \$5,000.

**Chattanooga—Wagon Factory.**—The Columbia Wagon Co., of Columbia, Pa., will probably establish a branch of its wagon factory in Chattanooga.

**Eagleville—Flour Mill.**—H. G. Palmer has recently put in a 50 barrel roller process flour mill.

**East Chattanooga—Water Works.**—The East Chattanooga Land Co. contemplates the construction of a system of water works.

**Erin—Stave Factory.**—W. O. Drake has recently built a stave factory with an annual capacity of 4,000,000; now in operation.

**Jefferson—Flour Mill.**—W. L. Davis has recently erected a 50-barrel roller process flour mill.

**Maplewood—Improvement Company.**—Jere Baxter, J. C. Bradford, R. Ewing and others of Nashville, have incorporated the Maplewood Improvement Co.

**Memphis—Buggy Factory.**—R. E. Gardner, of St. Louis, Mo., and two Ohio parties are corresponding relative to the establishment of a buggy factory in Memphis.

**Morristown—Tobacco Factory.**—A stock company has been organized with R. F. Taylor, president; J. A. Forgey, vice-president, and F. T. Nance, secretary, to operate the Morristown Tobacco Factory. The capital stock is \$30,000.

**Nashville—Dye-house.**—The Nashville Cotton Mill's dye-house, lately destroyed by fire, will be rebuilt.

**Ooltewah—Powder Factory.**—At a recent stockholders' meeting in Chattanooga the Chattanooga Powder Co. increased its capital stock from \$50,000 to \$100,000.

**Paris—Gun Factory and Machine Shops.**—W. M. Farron, of Holyoke, Mass., is investigating with a view of organizing a \$15,000 stock company for the removal to Paris of a gun factory and machine shop.

#### TEXAS.

**Brenham—Ice Factory and Electric light Plant.**—Albert Smith, of New York, is investigating with a view of establishing an electric light plant and ice factory in Brenham.

**Calvert—Grist Mill.**—Henry Oscar has, it is stated, erected and put in operation a grist mill.

**Cameron—Cotton Compress.**—A cotton compress will probably be erected.

**Harrisburg—Artesian Wells.**—Samuel Allen has, it is stated, sunk three artesian wells on his property near Harrisburg.

**Denison—Planing Mill.**—A. M. Ingersoll is reported as having purchased the Denison Planing Mill, and as to put new machinery in, enlarge and operate same.

**Denison—Planing Mill.**—Ingersoll & Collins have, it is stated, erected and put in operation a new planing mill.

**Denison—Wire Mill.**—The Southern Iron & Wire Works, recently referred to, has decided to remove its plant to Denison and is now making preparations to that end; will operate as the Denison Iron & Wire Works.

**Denison—Bottling Works.**—Armitage & O'Day, of Bonham, are reported as removing their bottling works to Denison and as to operate as the Denison Bottling Works.

**El Paso—Cigar Factory.**—The El Paso Cigar Manufacturing has obtained charter.

**Hallettsville—Bridge.**—John Buchanan will receive bids until February 8 for the construction of an iron bridge on Smother's creek, in Savaca county.

**Henderson—Real Estate.**—B. S. Walther, G. W. L. Smith and D. P. Richardson have incorporated the Texas Real Estate Co. with a capital stock of \$100,000.

**Llano—Dam and Water Works.**—W. W. Knowles & Son have, it is stated, made arrangements to enlarge and increase the capacity of their water works plant, also to build a granite dam across the Llano river.

**Marble Falls—Flour Mill.**—A roller process flour mill is reported as to be erected. The Texas Mining & Improvement Co. can give information.

**San Antonio—Slaughter-house.**—Amos Groves and others, lately reported as having received permission from the city council for the erection of a union slaughter-house, have incorporated for that purpose a \$13,000 stock company, with E. I. Arnold, president; George Jaggie, vice-president, and F. Brown, secretary.

**Santa Lucia—Cotton Gin.**—A cotton gin will be erected, as reported lately. J. D. Howson can give information.

**Taylor—Ice Factory.**—Report says that the Taylor Ice Co. will put in at a cost of \$14,500 an entire new outfit of machinery.

#### VIRGINIA.

**Basic City—Desk, etc., Factory.**—The Basic City School Desk & Furniture Manufacturing Co. will, it is stated, increase its capital stock, also the capacity of its factory.

**Basic City—Paper Mill.**—Financial arrangements have been completed for putting the Paper Fabrique Co.'s mill in operation.

**Berkley—Electric-light Plant and Water Works.**—The Berkley & South Norfolk Water & Electric Co., reported last week as applying for incorporation, proposes to establish electric-light plant and water works system for Berkley and South Norfolk. For particulars address Parke L. Pindexter, Norfolk.

**Buchanan—Agricultural-Implement, etc., Factory.**—O. A. Smith, of Clarkston, Mich., is to assume control of the agricultural-implement factory at Buchanan, and operate in connection with same a saw and planing mill, iron foundry, etc. Mr. Smith is also to remove his Clarkston plant to Buchanan.

**Clifton Forge—Ice Factory.**—F. M. Jones is reported as organizing a stock company for the establishment of an ice factory.

**Covington—Iron Furnaces, Smelters, etc.**—A bill has been introduced in the legislature to incorporate the Potts Valley Railroad & Iron Co. with authority to construct and operate blast furnaces, smelt iron ore, etc. The capital stock is \$1,000,000, with privilege of increasing to \$5,000,000.

**Covington—Coal and Timber Land.**—W. T. Thayer & Bro., of Charleston, W. Va.; Thomas Paxton, of Cincinnati, Ohio, and others have purchased 85,000 acres of coal and timber land near Covington. It is said that the purchase price was \$450,000, and that they have organized a stock company with W. T. Thayer as president to develop the property.

**Graham—Bottling Works, etc.**—G. M. Hanson, J. H. Crockett, L. Schereschewsky and others have purchased the Graham Bottling Works, lately referred to, and will enlarge operations to manufacture ginger ale, soda pop, vinegar, etc.

**Low Moor—Iron Mines.**—The Rich Patch Iron Co. contemplates enlarging operations at its iron mines, and putting an additional cone in its ore washer to increase the capacity of same.

**Lynchburg—Slate Mines.**—The Virginia Slate Mining Co. contemplates enlarging operations and increasing the output of its slate mines in Amherst county.

**Newport News—Ship-yards.**—The Newport News Shipyard & Dry-dock Co., recently mentioned as to improve its plant, has had introduced in the legislature a bill to increase its capital stock from \$2,000,000 to \$3,000,000. This new stock is to be used in the proposed improvements, which include bending shed, several ship-ways, etc.

**Newport News—Pipe Line.**—A bill to incorporate the Piedmont & Tidewater Pipe Line Co. has been introduced in the legislature. The incorporators mentioned are W. S. Archer, Clay Drewry, S. Galeski and others, and its object is to construct and operate a pipe line to terminate at or near Newport News. The capital stock is to be from \$50,000 to \$1,000,000.

**Pleasant Shade—Saw Mills and Timber Lands, etc.**—Northern capitalists are reported as having purchased timber lands at Pleasant Shade, and as to erect saw mills for the development of same.

**Pulaski City—Mineral Development.**—The Peak Creek Coal & Iron Co. will hold a meeting on January 28 looking to the development of its property.

**Pulaski—Iron Mines.**—The Crane Iron Co. is reported as having leased the Clark iron mines near Harper, and as to develop same.

**Richmond—Mineral and Timber Lands, etc.**—A bill has been introduced in the legislature to

incorporate the Virginia Land & Investment Co., which will have for its object the purchase, development and improvement of mineral and timber lands, etc. Among the incorporators are R. C. Marshall, A. P. Thom, Albert Young and others. The capital stock is \$200,000.

**Richmond—Dredging Company.**—The Virginia Dredging Co., reported last week as applying to the legislature for charter, has for its incorporators W. R. Trigg, N. E. Randolph, G. M. Wilson and others. Its objects are to build, equip and operate dredges, etc.; capital stock authorized \$500,000.

**Salem—Furnaces, Rolling Mills, Iron Mines, etc.**—The Salem & Craig Railway & Mining Co., reported last week as applying for charter, has, among other privileges, that of mining ores, erecting iron furnaces, rolling mills, etc. Among the incorporators are I. C. Langhorne and J. W. F. Altemong, of Salem; J. W. Marshall and A. E. Humphreys, of New Castle, and others; capital stock authorized \$5,000,000.

**West Point—Woodworking Factory.**—Delaware parties are reported as to establish a general woodworking factory in West Point.

#### WEST VIRGINIA.

**Alexander—Electric-light Plant, Planing Mill, etc.**—The Alexander Boom & Lumber Co. has recently put in an electric-light plant, and is building new dry-kilns and planing mill.

**Belington—Planing Mill.**—Buildings for a planing mill are in course of erection.

**Buckhannon—Creamery.**—D. D. T. Farnsworth and others have incorporated the Buckhannon Co-operative Creamery Association to manufacture butter and cheese. The capital stock is \$10,000.

**Buckhannon—Furniture Factory.**—A stock company is reported as being organized for the establishment of a furniture factory. The Buckhannon Land Trust Association can probably give information.

**Kanawha County—Flour Mill.**—Roman Pickens' roller flour mill is being erected at Upper Falls of Coal River, Kanawha county, and not at St. Albans, as reported last week.

**Moundsville—New Industries.**—A factory for the manufacture of plush goods, another glass factory and a woolen mill will probably be erected at Moundsville. The Moundsville Mining & Manufacturing Co. can give information.

**Moundsville—Electric light Plant.**—The Moundsville Electric Light Co. will probably put in a new dynamo to double the capacity of its electric-light plant.

**Normantown—Lumber Boom.**—R. M. Stalnaker and others have incorporated the Grass Run Boom Co. to build one or more lumber booms on Grass run in Gilmer county.

**Parkersburg—Saw Mill.**—The Pickens Lumber Co., reported last week (under Pickens) as incorporated, will erect a band-saw mill. Its principal office is at Parkersburg.

**Sistersville—Oil Well.**—Mr. Grace is reported as sinking an oil well on Miller's run.

**Sistersville—Tank Factory.**—J. P. Ridge has erected works for the manufacture of oil tanks, etc.

**Wheeling—Brick and Terra-cotta Works.**—James Paul and others have incorporated the Brooke Terra Cotta Co. to manufacture brick, terra-cotta, etc. The capital stock is \$7,000, with privilege of increasing same to \$50,000.

**Wheeling—Electric light Plant.**—The Whitaker Iron Co. is reported as to put an electric-light plant in its iron works.

#### BURNED.

**Buena Vista, Va.**—The Hotel Collonade; loss about \$40,000.

**Cadiz, Ky.**—The courthouse of Trigg county; loss about \$50,000.

**Central City, W. Va.**—The Phoenix Powder Mills; destroyed by an explosion.

**Charleston, S. C.**—The Palmetto Brewing Co.'s brewery; loss \$100,000.

**Crandall, Texas.**—The cotton gin of John Crawford.

**Decatur, Texas.**—The Decatur Roller Mill; loss about \$10,000.

**Elgin, Texas.**—The Elgin Broom Factory.

**Hollandale, Miss.**—The cotton gin of J. C. Lusby, near Hollandale's.

**Little Rock, Ark.**—The cotton gin of Frederick Hanger; loss \$18,000.

**Lovelady, Texas.**—The cotton gin of P. V. Goodwin, near Lovelady.

**McKinney, Texas.**—The McKinney Compress Co.'s cotton compress.

**Middletown, Md.**—The Catoclin Valley Creamery.

**Rising Star, Texas.**—The cotton gin of J. R. Lyon.

**Stony Man, Va.**—The Stony Man Hotel.

**Warsaw, Ga.**—The cotton gin of A. T. Abbott.

**Washington, D. C.**—The Presbyterian Church of the Covenant damaged by fire; estimated loss \$20,000.

#### Need of Technical Training in the South.

British rulers of the East Indies have not abandoned their intention to make that a cotton producing and cotton-manufacturing country. As a means to an end they have made the study of the nature and peculiarities of cotton a part of the curriculum of the Victoria Jubilee Technical Institute at Bombay. As an aid to its students, Mr. Hugh Bonie, "cotton master" of that institution, has published the first of a series of small text-books, which contains nearly 150 carefully-prepared questions and answers concerning cotton and the processes through which it passes. These tell, among other things, what "neppy" cotton is and what produces it; why there is a golden tint in some classes of cotton; where the weakest part of the fibre is and why it is there; which variety has the strongest fibre and which the weakest; what characteristics constitute good cotton, and what kind should be selected for the production of a cheap-combed yarn of good quality. Other questions and replies relate to machinery, as for example: "What are the advantages of the mule over the ring-frame, and the ring-frame over the mule?" "Why is the ordinary ring-frame not adapted to spin yarn upon the bare spindle?"

There is one admission in these answers that will interest the coast planters of South Carolina, Georgia and Florida. "It is generally supposed," the pupil is taught to say, "that the Sea Island cotton has the strongest fibre. This is a mistake, as the Indian cottons have the strongest filaments and the Sea Island the weakest. The reason is that the diameter of the former is greater than that of the latter." But (and here the admission is made) "Sea Island cotton makes much the strongest yarn. The reasons are: 1. That although each individual filament is weaker, yet, being smaller in diameter, a much larger number are contained in each cross section of the thread. 2. Because the fibres are longer and a lesser number of joinings are necessary. 3. The fibres, being smaller in diameter and softer, they absorb the twist better and lie more closely together."

While the superintendents of American mills have a complete practical knowledge of these matters, it is questionable whether their employees have even a smattering of information on the subject. If there is in any industrial educational school in the South, from the lowest to the most advanced, a teacher whose line of instruction corresponds to that of the "cotton master of the Victoria Jubilee Technical Institute at Bombay," it is not set down in the list of the faculty.

The South intends to become the great seat of cotton manufacturing for the world. Before it can attain that proud eminence it has much to learn and much experience to acquire. The adoption of the British Indian system of instruction of the youth in its industrial and technical schools would be an important step towards these attainments.



## Prospectus of the Carolina Sulphuric Acid Manufacturing Company.

The purpose of the Carolina Sulphuric Acid Manufacturing Company is to mine and sell pyrites ores, and also to manufacture sulphuric acid from pyrites.

Blacksburg, South Carolina, has been fixed upon as the most favorable site for the location of works. It is the crossing point of the main lines of two important railroad systems—the Richmond & Danville and the Charleston, Cincinnati & Chicago, which furnish direct routes to the large phosphate and fertilizing factories of North and South Carolina, Georgia and Florida, and give also competing routes to New York and the North.

A brief statement of facts will be of interest to those who are not already familiar with this industry.

A distinguished writer on chemistry and metallurgy, Professor N. P. Pratt, of Atlanta, Georgia, recently said: "Sulphuric acid enters into and is the basis of all manufactures and all heavy chemistry. It is called the king of acids, and the greatest of English chemists went so far as to say that the prosperity of a country is to be measured by the quantity of sulphuric acid it makes." Enormous quantities of sulphuric acid are used in making soda and bleaching powders. It is used in dyeing and bleaching works. It is a necessity in the manufacture of fertilizers. Phosphate rock, the basis of commercial fertilizers, is treated with sulphuric acid before it can be made available.

Once sulphuric acid was made exclusively from brimstone imported from Sicily. It was discovered that it could be made from an ore called pyrites, which, in the form used for the purpose, is a combination of iron and sulphur. This discovery broke up the monopoly that Sicily had held, but it led to a much more widely extended use of the acid, and the supply has never been far enough in advance of the demand to keep down prices or to restrict the shipment of brimstone from Sicily. The manufacture of the acid from pyrites has been one of the most profitable of all industries. The discovery and development of phosphates in Florida has already largely increased the need for sulphuric acid, and this increased demand has resulted in higher prices for brimstone.

The projectors of this Company have been for nearly two years looking for pyrites in the South in such quantity and of such purity as would justify the erection of works to utilize it. They have discovered veins in Western North Carolina far in advance of anything they had counted on in extent, accessibility and freedom from impurities.

The Company owns 4,213 acres of land, on which there are two veins of pyrites.

The largest one (called Vein No. 1, or "Mammoth Vein") is in Jackson county, N. C., three miles from Balsam Station, on the Western North Carolina Railroad, on a tract of 4,025 acres owned by the Company. Bald Mountain, on the Company's property, where an enormous "blow out" of pyrites occurs, is 5,700 feet high. This mammoth vein of pyrites shows a solid body of pure ore from the top of this mountain to the base, and over 400 feet wide. In addition to this enormous "blow out," the vein can be traced for miles on the property of the Company, showing a width of from 50 to 200 feet. (See expert's report attached.)

The short spur of railroad which the Company will build will connect this immense deposit with the Richmond & Danville system. Preliminary surveys show that no engineering difficulties will be encountered, nor any high grades or expensive construction work be needed. It is believed by experts that with this short branch constructed, the pyrites can be mined and put aboard cars at a cost not to exceed 15 cents per ton. Such favorable rates of freight are assured for this deposit (which will cost so little to mine, to handle and to transport) that this is certain to be the source of supply for acid for fertilizers and other manufactures in the New England, the Middle and the Southern States, for the mines and Blacksburg, where the acid works are to be, are both so favorably located that output of mines and factories alike can be delivered at a lower cost than is now anywhere attainable.

The quantity of pyrites on this Company's property in actual sight is beyond appreciable estimate. It is simply a mountain 5,700 feet high and hundreds of feet wide, containing an easily-reached and inexhaustible supply.

Vein No. 2 is situated in Gaston county, North Carolina, three miles from Crouse Station, on the Carolina Central Railroad, and two miles from the Chester & Lenoir Railroad. This vein is well defined with slate walls. The ore is solid and pure; no sand, flint or foreign substance of any kind in it. The vein is developed by a shaft thirty-six feet deep, with a drift seventy-two feet, showing a solid vein of ore four feet wide from the mouth of the shaft to the breast of the drift. This new drift runs directly under an old drift that was run in by the Confederate Government during the late war, and the shaft used now is one sunk by that government. There is another old shaft which was also sunk by that government, and which is about two thousand feet from the new opening. This shaft is 56 feet deep, and shows 8 feet of solid ore. This tract consists of 188 acres of land, and covers over one mile of the vein. The capacity of this vein is more than sufficient to furnish double the ore supply of the Company for years to come. This ore is of extraordinary purity, burns free, and carries fifty per cent. of sulphur. A contract for three years' supply at a very profitable price has just been closed by the Company with the Charlotte Oil & Fertilizing Company, of Charlotte, North Carolina, one of the largest, most wealthy and most successful manufacturing concerns in the South. One of the officers of this company made a personal visit of investigation to this vein, and, after a thorough examination into the extent and quality of the ore, he closed the contract. (See expert's report attached.)

The consumption of pyrites in the United States in 1881 was 8,000 tons. The annual consumption increased rapidly. In 1885 it was 96,400 tons, and in 1889 it had grown to 184,500 tons; in 1891 it was 250,000 tons, and it is estimated that over 300,000 tons will be used in 1892.

There has not heretofore been any large development of pyrites in the South, the supply having come mainly from Spain and Newfoundland. Nearly all the sulphuric acid works in the South still use brimstone as a raw material.

In the early part of 1890 the *Manufacturers' Record*, of Baltimore, published a series of articles on "Pyrites in the Southern States," written by Mr. W. H. Adams, a mining engineer and metallurgical expert having intimate knowledge of the subject. The following is from the first paper of the series, published February 1, 1890:

"The utilization of pyrites ores in manufacture of sulphuric acid, a problem fully

worked out in the Northern States during the past ten years, has as yet found few advocates in the South, a section of this country more deeply interested in the subject, and to whose people greater benefits would accrue than are possible in any other.

"For over twenty years discussions have been going on and articles written for the technical journals calling attention to the wide difference in cost of sulphuric acid when manufactured from pyrites or the imported brimstone.

"Savannah, Georgia, and Beaufort, South Carolina, are the two cities south of Baltimore with factories built for manufacture of sulphuric acid from pyrites. All the other factories were built for and consume brimstone.

One ton of brimstone "seconds," cost to average, ex ship, at any of the seaboard works, ... \$21 00  
This ton of brimstone will net say 95 units of sulphur, after losses in handling, storage, burning, escape of gas, etc., are fully allowed for.  
Two and one-half tons of pyrites, containing net 95 units sulphur as above, can be laid down at seaboard factories for average cost of ... \$12 50

The difference in cost of equal amounts of sulphur is ... \$ 8 50

"By methods of working, now common throughout Europe and our Northern States, this difference is unquestioned, and for inland cities there would be a sure saving of \$7 to \$10 per ton of brimstone consumed. This means more than it casually shows. For a works burning three tons of brimstone daily it is 300x3x\$21=\$18,900, in gold, which is the minimum annual payment to foreign nations for brimstone and freights, not a dollar of which is retained in this country; it means 300x3x\$12.50=\$11,250, which should be paid annually for pyrites mined in this country, every dollar of which would remain in the South for her development.

"It means a loss to each factory consuming three tons of brimstone daily of \$7,650, or sufficient to pay the annual salaries, interest and wear and tear of such a plant. On the basis of 50,000 tons of brimstone annually consumed for fertilizer products sold in the Southern States, it means an annual loss to the factories of the South of over \$350,000, the difference between cost of brimstone and pyrites; an annual payment to foreign miners and vessel owners of over \$1,000,000 gold; an annual loss to the working classes of our own country of over \$600,000."

Since this was written the price of brimstone has advanced, and the factories are now paying \$35 to \$37 a ton.

This Company can lay down at its works at Blacksburg from its own mines 2½ tons pyrites for less than \$5. The cost of raw material to this Company will therefore be not more than one seventh of the cost to works using brimstone; or, comparing the cost to this Company with what it will cost other factories using pyrites, the prevailing price of ore at the works is \$7 to \$8 a ton. It will cost this Company, delivered at its works from its own mines, less than \$2 a ton.

A factory consuming 75 tons of pyrites a day will pay annually for its raw material 75x365x\$7.=\$191,625  
The cost to this company would be 75x365x\$2.=\$54,750

An annual saving on raw material alone in favor of this company of ... \$136,875

Besides the revenue from its works the Company will have a source of enormous profit in the sale of its ore to other works. It has now one contract to run three years for the sale of ore at a price that will pay an annual profit of more than \$10,000 over and above all expenses, including cost of mining, salaries and everything. One of the most competent judges in the country estimates that the Southern States will consume in 1892 more than 300,000 tons of pyrites. It is confidently believed, on the most reasonable and conservative grounds, that the Carolina Sulphuric Acid Manufacturing Co. can supply at least one third of this quantity. Imported ores are now selling at \$7 a ton at tidewater. This price can be had for ore shipped from this Company's mines. Ore from what has been called "Vein No. 1" or the "Mammoth Vein" can be mined and delivered at Charleston for considerably less than \$3 a ton, leaving a profit of more than \$4 a ton.

In the foregoing estimates all contingencies have been taken into account and the most liberal allowance made for any possible "extras."

After the extraction of the sulphur from the ore the residuum is sold to furnaces for the iron. Dr. Pratt, in a recent article, says on this point:

"An important item in the manufacture of sulphuric acid from pyrites is the iron that is left. The residuum from pyrites ore carries in the neighborhood of 60 per cent. of metallic iron, which is in ready demand at all furnaces at which it may be delivered. The foreign sellers of pyrites always reserve in their contracts the right to the disposition of this residuum, selling only the sulphur in the ore. All raw ore at the furnaces is roasted before being charged. By this process the sulphur is first utilized, and the ore is roasted at the same time, thereby saving a heavy outlay for wood in the calcination operations at the iron furnace. The residuum would be worth more than raw iron ore, because part of the ordinary work, that is to say, the roasting, has already been done. I should think the residuum would be worth \$4 a ton at the furnaces. That is about the ruling price of the limonite ores after calcination."

As a matter of fact the Charlotte Oil & Fertilizer Company are shipping their cinder to Birmingham at a price that nets them \$3.50 a ton.

The capital stock of this Company is \$1,000,000, of which \$650,000 is common stock and \$350,000 preferred stock carrying ten per cent. cumulative dividends. Of the common stock, \$450,000 is issued in payment of the two ore properties heretofore described, and which are owned in fee, without incumbrance and with perfect title. The remaining \$200,000 is left in the treasury for such subsequent use as the Company may determine upon. The \$350,000 preferred stock, divided into 3,500 shares at \$100 a share is offered for sale at par. Of the proceeds of the sale of this stock, \$250,000 will be required for the construction of the works and \$100,000 will be used as working capital. In addition to the ten per cent. cumulative dividends which the preferred stock will receive, a sinking fund of ten per cent. of the cost of the plant (that is \$25,000) will be set apart annually out of the earnings of the Company before the common stock will be entitled to dividend. This sinking fund, like the preferred stock dividend, will be cumulative and will provide at the end of ten years a sum of \$250,000 for the erection of new works. The common stock will be entitled to the earnings of the Company remaining over and above the dividends on the preferred stock and the sinking fund.

It is provided in the By-Laws of the Company (Article 12) that no bond of this Company shall be issued, nor shall any mortgage be made upon any of its property without the consent of at least seventy-five (75) per cent. of the preferred stock and fifty (50) per cent. of the common stock.

### SUMMARY.

|                      |                |
|----------------------|----------------|
| Cost of plant.....   | \$250,000 00   |
| Working capital..... | 100,000 00     |
| Preferred stock..... | \$350,000 00   |
| Common stock.....    | 650,000 00     |
|                      | \$1,000,000 00 |



## PROFIT ON A PLANT USING 27,000 TONS PYRITES A YEAR.

ANNUAL PRODUCTION.

|   |              |
|---|--------------|
| 27,000 tons of ore consumed by the works will give 54,000 tons of 50° acid. |              |
| Allow 4,000 tons for loss and say   | \$9,000      |
| Selling price f. o. b., \$5.00  | \$5 00       |
| 17,000 tons of cinder at \$2.50   | \$42,500 00  |
| Total gross return from works   | \$343,500 00 |
| The details of the estimate of the cost of production are as follows:       |              |
| Pyrites, 27,000 tons, at \$2.00   | \$54,000 00  |
| Nitrate of soda, 810,000 pounds, at 2½ cents                                | 16,500 00    |
| Coal, 3,500 tons, at \$3.50   | 12,250 00    |
|   | \$82,900 00  |
| Breaking ore, 27,000 tons, at 50 cents                                      | \$13,500 00  |
| Foreman, \$3.00 per day   | 1,495 00     |
| Chambermen, two, at \$1.50 per day  | 1,495 00     |
| Acid blowers, two, at 75 cents per day                                      | 547 50       |
| Charging men, twelve, at \$1.00 per day                                     | 4,380 00     |
| Cinder carriers, twelve, at 75 cents per day                                | 3,295 00     |
| Boiler men, two, at \$1.25 per day  | 912 50       |
| Yard men, four, at 75 cents per day   | 1,093 00     |
| Extra man, one, at 75 cents per day   | 375 00       |
| Boy, one, at 25 cents per day   | 91 25        |
|   | 26,285 00    |
| Oil, lights, brooms, etc  | \$750 00     |
| Shovels and other tools, etc  | 270 00       |
|   | 1,000 00     |
| Minor repairs   | 20 000 00    |
| Interest, 8 per cent. on \$250,000  | \$20,000 00  |
| Sinking fund, 10 per cent.  | 25,000 00    |
| Insurance, 3 per cent.  | 7,500 00     |
| Superintendence, office and laboratory                                      | 52,500 00    |
|   | 6,000 00     |
| Total annual expense  | \$169,685 00 |
| Total annual net profit from the works                                      | \$173,815 00 |
| To this add profit on sale of 30,000 tons of ore at \$4.00                  | 120,000 00   |
| Net annual profit   | \$293,815 00 |

It is conservative to calculate that during the year 1892 the company will sell 30,000 tons of ore from Vein No. 2. The price of Newfoundland ore at the following cities is:

|                   |                 |
|-------------------|-----------------|
| Charleston, S. C. | \$6 75 per ton. |
| Columbia, S. C.   | 8 00 " "        |
| Atlanta, Ga.      | 8 00 " "        |

Making an average price per ton of \$7.58½.

Vein No. 2 is distant from—

|                   |            |
|-------------------|------------|
| Charleston, S. C. | 240 miles. |
| Columbia, S. C.   | 160 " "    |
| Atlanta, Ga.      | 237 " "    |

Ore can be delivered, including all expense of mining, freights, etc—

|                           |                 |
|---------------------------|-----------------|
| To Charleston, S. C., for | \$1 70 per ton. |
| To Columbia, S. C., for   | 1 30 " "        |
| To Atlanta, Ga.           | 1 70 " "        |

Calculating the price of the ore at \$7.00 per ton as an average, will net the Company over \$5.00 per ton, or \$150,000 from sale of ore.

Vein No. 2 is only 30 miles distant from where the acid works will be located. The completion of 2 miles of narrow-gauge track will enable the railroad to place their cars at the ore dump. No rehandling of the ore is necessary, as the narrow-gauge trucks are changed by the railroad by means of a "hoist." Ore can be delivered to the acid works at less than \$1.00 per ton, including all expense of mining, freight, etc.

The items of expense are calculated beyond what they will be. For instance, we allow 50 cents per ton for breaking ore; this is being done at Charlotte, N. C., for 5 cents per ton. Coal we place at \$3.50 per ton; it is offered to the Company at \$2.35 per ton. Ore we place at \$2.00 per ton; it will cost less than \$1.00 per ton. The sale of cinder we put at \$2.50 per ton; it is now sold by works not so well located at price that nets \$3.50. Instead of calculating the net per ton on ore sales at \$5.00, which our advantage of location will give, we put it at \$4.00 per ton. We place the price of acid at \$6.00 per ton; present quotations are very much higher. In calculating the items of expense and profit we have endeavored to be strictly conservative, and whilst the profits seem to be so large, yet the location of our mines and works almost in the heart of the immense phosphate region of the South, the purity of our ore and the quantity in sight, the small expense of placing it in market, the vast amount saved in freights on our ore by reason of our location, our admirable shipping facilities, and the low price at which we can secure our labor, all make our position so strong that active operations will demonstrate that the profits will be largely increased above the estimate made.

Report by J. SHEARSON HYLAND, M. E., Ph. D., M. A., on the properties of the Carolina Sulphuric Acid Manufacturing Company, situated in Jackson and Gaston Counties, State of North Carolina.

CHEROKEE INN, BLACKSBURG, S. C., January 14, 1892

MAJOR J. F. JONES,

President Carolina Sulphuric Acid Manufacturing Company, Blacksburg, S. C.

Dear Sir—In accordance with your instructions I have examined the pyrites properties belonging to your Company, and now take pleasure in submitting the following report as the result of my investigations:

The properties consist of two tracts, 4,025 and 188 acres in extent, and respectively situated in Jackson and Gaston counties, State of North Carolina. They occur in the primary series of rocks, and contain two veins of iron pyrites.

The Jackson county tract is located in a region which in early geological times was subjected to the most intense metamorphism; in fact, to agencies which are understood to be most conducive to the formation of immense "leads" of mineral matter. The discovery of a great deposit of ore upon it is therefore not unexpected. A huge vein courses through the land, and can be traced over a large stretch of country along a line that runs East 16° South, and West 16° North. The vein, three continuous miles of which the Company owns, and which will be designated "Vein No. 1," has only been opened up on Bald Mountain, a lofty ridge 5,700 feet high, and upon the Company's property. This report will therefore only treat of that portion of the vein which the mountain contains. This mountain is distant 3½ miles from Balsam, a station on the Western North Carolina Railroad. The vein was discovered several years ago during a search for copper. On the extreme top of the mountain it is exposed in an open pit 14 feet deep. "Blow-outs" have been made at selected points on both flanks and ore struck in quantity. The most distant of these "blow-outs" have been measured and found to be 3,250 feet on the one slope and 683 feet on the other, reckoning from the pit on the summit. The walls consist of gneissose rock, whilst the cap is of quartzite more or less impregnated with pyritic material.

The vein runs through the mountain obliquely at an angle of about 45°. Taking the cap-rock as evidence, the dip of the vein will be slightly downwards in the direction of E. 16° S. The width averages 300 feet, but the vein broadens in a descending direction, the maximum width discovered being 330 feet. The vertical extension is proved

by "blow-outs" to a depth of 550 feet; but the vein can be traced by float-ore down to the creek, which is 2,500 feet below the cap of the mountain. The length of the vein varies from 3,000 to 7,000 feet, the greatest length being, of course, found at the base of the mountain.

The second vein ("vein No. 2") occurs in Gaston county, and is 3 miles distant from Crouse Station on the Carolina Central Railroad; and about 2 miles from Hardin Station on the Chester & Lenoir Narrow Gauge Railway, a branch of the Richmond & Danville Main System. It is a well-defined vein with strong, firm walls of argillaceous slate, and is fed by numerous "stringers." It lies but a few feet below the level of the country. It crops out in numerous creeks and streams, and can be traced for about 2 miles along the trend, which is here N. 15° E. The Company owns one continuous mile of the "lead."

The vein is developed by a shaft 36 feet deep, with a drift 72 feet long, showing a solid mass of ore from the mouth of the shaft to the breast of the drift. The thickness, as shown in the drift, is from 3 to 4 feet, with an average of 3½; but the evidence suggests the expectation that the vein will widen out on going deeper down. The deposit was worked by the Confederate Government during the war. An old shaft sunk by that government, and 56 feet deep, is 2,000 feet from the one just mentioned, and is said to show 8 feet of solid ore. At the present time, a new shaft of capacious dimensions is being put down, with the view of running a level to cross cut the vein and increase the output of material. The pitch of the ore is found to be to the west.

The perpendicular depth of this vein cannot, owing to the nature of the deposit, be determined. It is evidently unlimited, and should be quite 500 feet. In this district, veins of similar mineral have been worked to several hundred feet without arriving at the extreme end, and without creating difficulties in the manner of drainage.

In colour the ore of both veins is brassy to lightest yellow, with occasional tints of silvery white. In texture it is strong and massive. It can, therefore, be raised in large blocks and shipped to market at a minimum of loss, whilst the proportions of "fines" after a long railroad haul will be insignificant. The grain is coarse in vein No. 1 and medium-sized in vein No. 2. The fracture is uneven to regular.

The ore is exceptionally pure. Vein No. 1 contains small isolated fragments of quartz, but no other foreign material. As the specimens examined came from portions of the deposit adjacent to cap-rock (quartzite), it is only reasonable to suppose that the quartz represents included fragments of the cap rock, and that it will practically disappear when the main mass of ore is tapped. In opposition to vein No. 1, vein No. 2 does not show—at least to the naked eye—any definite trace of foreign admixture. The quality and excellence of this ore are remarkably constant.

The deposits offer no obstacles to mining operations. Vein No. 1 can be worked partly by drifts and partly by open cuts. In fact, such is the extreme hardness of the material and such the position of the vein that the ore can be quarried like granite or any other rock. Delivery of ore to a loading station at the foot of the mountain would be made by shutes. Vein No. 2 will be mined by levels. The roof will be of ore, which is sufficiently strong for that purpose. There should be no difficulty with the drainage at either locality.

As regards cost of mining, this will not exceed 15 cents at vein No. 1, and will not be greater than 25 cents at vein No. 2.

The quantity of ore is so enormous that the mind can hardly appreciate the vastness of the supply. Taking vein No. 1, Bald Mountain should contain at least 400,000,000 gross tons of ore. In order, however, to allow for all possible contingencies—contingencies which are not at all likely to occur—200,000,000 tons will be regarded as the available quantity. Supposing 1,000 tons be shipped daily and 300 days be considered as the number of working days per year, there is sufficient ore to last 650 years.

There is still two miles of undeveloped vein on the company's property not included in the above estimate.

As regards vein No. 2, this is capable of producing 1,200,000 tons of ore. Supposing 100 tons be shipped daily, there is sufficient mineral on the property to last for years.

This latter estimate is, of course, based on a three-foot vein and only working to a depth of 500 feet. This vein is, however, wedge-shaped, with the smaller end at the surface, for it increases from 1 foot at the outcrop to 3½ in a depth of 28 feet. Besides, in the old 56-foot shaft sunk by the Confederate Government, the ore, according to reliable report, shows up to a thickness of 8 feet, while at the Long Creek mines in the immediate vicinity, a similar and apparently identical vein of pyrites is 18 feet wide at a depth of 130 feet. It is therefore highly probable that a proportionate increase in the thickness of vein No. 2 will occur as greater depth is attained, and that the above estimate does not adequately indicate the amount of ore obtainable above a 500 foot level. The ore of vein No. 2 can be placed on all Southern markets for less than \$2 per ton. Taking the price of Newfoundland ore at \$8, this will mean a net gain of at least \$6 per ton. Therefore, the profit from vein No. 2 alone will be \$7,200,000, an amount that represents a return of seven times the authorized capital of the company.

The question of transportation to the railroad presents no difficulties. As regards vein No. 1, the Company proposes to build a standard-gauge railroad from the trestle below Balsam up Dark Ridge creek to the foot of Bald Mountain. The route has been subjected to a preliminary survey, and is not fraught with any engineering difficulties. The grades will not be heavy nor the construction expensive. The base of Bald Mountain is about the same height as Balsam Station, on the Western North Carolina Railroad. Connection between vein No. 2 and the railroad will be effected by means of a narrow-gauge railway joining the Chester & Lenoir branch of the Richmond & Danville at Hardin.

These pyritous ores constitute a very high grade of material for the manufacture of sulphuric acid. A test shipment of over 20 tons was recently forwarded to the Charlotte Oil & Fertilizing Co., of Charlotte, North Carolina. It was found that the ores readily gave off their sulphur, and, being compact and strong, possessed the additional advantage of "standing up" in the roasting furnaces. No repeated stirring of the heated mass was required; no formation of clinkers or slag occurred, but the ore became porous and allowed the ready escape of the gas, and accordingly the full desulphurization of the material. In this regard it is far superior to the Newfoundland ore, which demands constant attention to prevent the caking that renders the complete extraction of the sulphur extremely difficult. On the strength of this shipment, which was a representative one, and after a personal investigation of the property, the Charlotte Company has contracted with your Company for a three years' supply of ore.

The residue obtained after burning is peroxide of iron, purplish red in colour, and commonly known on the English market as "purple ore" or "Blue Billy." It is generally used for fettling puddling furnaces, but is also smelted to a large extent, being



added to the blast furnace charge in the proportion of 25 per cent. of the amount of solid ore.

In physical character, purity of composition and burning qualities, these ores are decidedly superior to the imported product. There is no doubt, in my opinion, that they will successfully compete with the Newfoundland ores, and eventually supplant them in the market. In view of the magnitude of the deposits and their exceptional purity, the successful career of your Company is assured. The demand for the raw product is daily becoming larger, having grown since 1881 from 8,000 tons to 250,000 tons in 1891; whilst the market for the manufactured article is enlarging. Sulphuric acid being essential to numberless industries, and especially indispensable to the immense and continually increasing manufacture of phosphates and fertilizers. The possibilities of the trade in the near future are practically unlimited; and the possession by your Company of such inexhaustible deposits, combined with your excellent transportation facilities, should tend to place you in a position to stock and control the markets of the country. I am, dear sir, your obedient servant,

J. SHEARSON HYLAND, M. E., Ph. D., M. A., of London, England.

Formerly of Her Majesty's Geological Survey of the United Kingdom.

NOTE.—A few hundred yards west of vein No. 2 there is an outcropping of limonite, having the well-known honey-comb character. It is probably nothing else but the decomposed top of another pyrites vein. On the Jackson County tract chrome-iron in quantity occurs. J. SHEARSON HYLAND.

#### CAROLINA SULPHURIC ACID MANUFACTURING COMPANY.

CHARTERED UNDER THE LAWS OF SOUTH CAROLINA.

WORKS TO BE ERRECTED AT BLACKSBURG, SOUTH CAROLINA.

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T. B. GAUTIER, Secretary and Treasurer.

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### MACHINERY WANTED.

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler.—Marcy & Leeds, Belington, W. Va., wants prices on a second-hand boiler of from 20 to 24 horse-power.

Boiler.—Mike Brown, Barnwell, S. C., wants a 25 horse power vertical boiler.

Boiler and Engine.—G. W. Wilkinson, Roanoke, Va., will buy a boiler and engine.

Boiler and Engine.—J. T. Wyatt, Faith, N. C., wants to exchange a set of granite gold grinders for a small engine and boiler complete.

Boiler and Engine.—The Anglo Florida Phosphate Co., High Springs, Fla., wants an engine and boiler of from 25 to 40 horse-power.

Bucket and Tub Machinery.—C. A. Cutting, Middletown, Va., wants to purchase second-hand bucket, tub and pail machinery; send full description and price-list.

Cable Line.—J. Bradley Patterson, Bridgeport, Ala., will want materials for constructing a cable line for stone haulage.

Canning Outfits.—W. S. Black, Fairfax, S. C., wants catalogue of canning outfits.

Conveyors.—The Anglo Florida Phosphate Co., High Springs, Fla., wants conveyors.

Cotton Gin.—J. H. Dogan, Garner, Miss., will want cotton gin.

Cotton Gin, etc.—C. Wilson, Collinsville, Texas, wants to purchase an 80-saw cotton gin; also cotton press, separator and stacker.

Creamery.—G. W. Wilkinson, Roanoke, Va., will buy outfit for creamery.

Derrick.—J. M. Stephens, Sanford, N. C., will want a derrick.

Derricks.—Fred Hanger, Little Rock, Ark., wants derricks.

Drill.—The Bridgeport Stone Co., Bridgeport, Ala., will soon need a steam drill.

Drills.—Wm. E. Kidder, 25 Orleans street, Newark, N. J., will need steam drills.

Drums.—The Rich Patch Iron Co., Low Moor, Va., wants prices and description of incline plane drums. Address J. G. O'Callaghan, secretary.

Electrical Railroad.—A. C. Bruce, president East Lake Land Co., Atlanta, Ga., can be addressed relative to the purchase of supplies for an electrical railroad.

Engine.—Marcy & Leeds, Belington, W. Va., wants prices on an 18 or 20 horse-power second-hand engine.

Engine.—E. D. Seaton, Lonoke, Ark., wants prices on a 40 horse power engine.

Feed-cutter.—G. W. Wilkinson, Roanoke, Va., will buy feed cutter.

Feed-water Heaters.—The Ice, Light & Water Co., Terrell, Texas, wants prices on feed-water heaters of 125 to 150 horse-power capacity.

Heating Apparatus.—J. D. Abalt, Burkittsville, Md., wants information regarding heating apparatus for warehouse.

Hoisting Apparatus.—Wm. E. Kidder, 25 Orleans street, Newark, N. J., will need hoisting apparatus.

Hoisting Engine.—J. M. Stephens, Sanford, N. C., will want a hoisting engine; second-hand one will do.

Hoop Machine.—Miles Bros., Smallhouse, Ky., will buy a hoop machine.

Hoop Machine.—C. T. Paris & Co., Big Clifty, Ky., want a hoop machine to saw 12 to 15 M hoops in 10 hours.

Hose.—T. S. Wilcox, Chattanooga, Tenn., will receive bids until February 3d for 300 feet first-class four-ply 2½ inch rubber hose, not to weigh less than 70 pounds to the section, with a 4-year guarantee and a 400 pound pressure, rigged with Gilmore couplings.

Lath Machine.—Miles Bros., Smallhouse, Ky., will buy a lath machine.

Laundry Machinery.—The Moundsville Mining & Manufacturing Co., Moundsville, W. Va., wants catalogues and prices of laundry machinery.

Laundry Supplies.—Bell & Barrow, Staunton, Va., want catalogue of laundry supplies.

Locomotive.—The W. R. Burgess Machinery Co. (dealers), Greensboro, N. C., wants a light locomotive, about 7x14-inch cylinders; second-hand will do.

Mining Machinery.—Wm. E. Kidder, 25 Orleans street, Newark, N. J., will need hydraulic mining machinery.

Miscellaneous.—Mike Brown, Barnwell, S. C., wants to purchase a No. 2 Shriver process kettle, 2 No. 2 Shriver crates, 3 exhaust crates for 52-inch tub, 2 perforated crosses for 52-inch tub, 1 set of crane irons, 1 air gauge, 2 fire pots, 1 forging stake, 4 Tillery capping irons, 4 cappers for 2-pound cans, 4 cappers for 3-pound cans, 4 tipping cappers, 1 Steven hand-power tomato filler, 1 Warfield tomato scaldier, 1 injector and 1 ejector.

Phosphate-mining Plant.—The Chicago-Florida Phosphate Co., now organizing, will doubtless want a complete phosphate-mining plant. Address H. H. Graham, High Springs, Fla.

Piping.—J. T. Howard, Quincy, Fla., wants quotations on clay piping in carload lots.

Polisher.—P. Prybil, 512 W. 41st street, New York, N. Y., wants a machine for polishing rosewood trays; the moulding is 1x1½ inches, and want to polish on the outside without the use of shellac.

Power.—The Graham Publishing Co., Graham, Va., will purchase power for its press.

Printing Presses.—The Graham Publishing Co., Graham, Va., will purchase several printing presses.

Pulleys, etc.—Marcy & Leeds, Belington, W. Va., want pulleys and shafting.

Pump.—The Anglo-Florida Phosphate Co., High Springs, Fla., wants a pump.

Pumping.—Wm. E. Kidder, 25 Orleans street, Newark, N. J., will need pumping machinery.

Quarrying Machinery, etc.—J. M. Stephens, Sanford, N. C., will want quarrying machinery and tools.

Rails.—The W. R. Burgess Machinery Co. (dealers), Greensboro, N. C., wants about 5 miles of 20-pound rails; second-hand will do.

Rock Crushers.—The Anglo-Florida Phosphate Co., High Springs, Fla., wants rock crushers.

Rock Drills.—The Columbia Marble Co., Knoxville, Tenn., will purchase two rock drills.

Saw and Planing Mill, etc.—N. L. Stoddard, Hinesville, Ga., wants to exchange lumber for a saw mill complete; also a planer and shingle mill. Second-hand machinery will do.

Saws, etc.—Fred Hanger, Little Rock, Ark., wants saws and splitting machinery.

Saw Mill.—E. D. Seaton, Lonoke, Ark., wants prices on a saw-mill outfit.

Shingle Mill.—C. H. Cutting, Middletown, Va., wants a shingle mill, new or second-hand.

Stone Crusher, etc.—Fred Hanger, Little Rock, Ark., wants stone crusher, steam stone saws, etc.

Tanks.—Mike Brown, Barnwell, S. C., wants to purchase a 30-gallon gasoline tank, a galvanized blanching tank and a galvanized blanching receptacle (perforated).

Tinner's Outfit.—Beeson Bros., High Point, N. C., want to purchase a tinner's outfit, new or second hand.

Traction Engine.—C. Wilson, Collinsville, Texas, wants to buy a 12 horse-power traction engine.

Tramways.—Fred Hanger, Little Rock, Ark., wants portable tramways.

Wheelbarrow Machinery.—C. G. Memminger, Charleston, S. C., wants to correspond with manufacturers of machinery for making wheelbarrows.

The Desha Lumber & Planting Co., Arkansas City, Ark., wants to purchase a second hand bell weighing about 1,000 pounds.

An illustrated catalogue of the graphite productions of the Joseph Dixon Crucible Co., of Jersey City, N. J., has been issued by that company. This company, which has been established since 1827, claims that it is the oldest house in the graphite trade, and the only manufacturers of graphite products owning its own graphite mines. They manufacture silica graphite paints, protective coverings from the weather, traction belt dressing and leather preservative, graphited lubricating oil, carburet of iron, electrotyping graphite, crucibles of all sizes for many uses, and pencils and crayons of many varieties in finish adapted for all purposes of work. A copy of this catalogue will be mailed on application.

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### Drying, Calcining and Pulverizing Various Materials.

Necessity has been the mother of many inventions, and among them may be classed some new machines and devices invented by Mr. F. D. Cummer, of Detroit, Mich. Several years ago Mr. Cummer purchased a piece of mineral property, and the "contrariness" of the material, he says, compelled him to devise machinery and methods on new principles, for no machinery or process that he could find would do the work required. In his experiments he was successful, and he went ahead on his work without attempting to put his devices on the market, until one after another hearing of what he had accomplished applied for similar machines. Finding that many people were struggling with refractory materials, he concluded to erect a substantial experimental plant, which has been done at a cost of \$15,000. He then began inviting every one who had trouble in drying or calcining any material to send samples to him prepaid, informing them that he would make tests without cost to the sender, and if the tests showed him that he could handle their material with his machinery or apparatuses, he would, on mutually fair terms, handle a larger quantity, so that in

pebbles as it comes from the bank, summer or winter, at the rate of 10 to 15 tons per hour with each machine, and handle it mechanically from the bank to the brick press or other final process through which it has to pass without the aid of a shovel or a man. The clay will be in a thoroughly even and tempered condition, and may contain any desired percentage of moisture, and, as said before, each and every atom will be equally moist or thoroughly dry, as for the purpose it is to be used is necessary or desirable.

"This system in dry brick-making will dispense with acres of sheds, their cost, the room they occupy, large storing capacity and double handling of the clay. Dry pressed bricks can be made as cheaply in cold climates as in warm climates. By this process the clay can be thoroughly mixed as it comes from the different depths of the face and from different parts of the bed or deposit, so that the dried product will be thoroughly even in texture and quality.

"We guarantee the cohesion of the clay to be as great after drying as before; besides, the clay is much easier pulverized than when sun-dried. The lumps or clods are not as hard, although they may be as dry. By carrying this system further, clay

so that they may not be injured by the action of the heat upon them, and so moist that the heat absorbed and carried by the material will not complete the process of drying or calcining. But we have a very simple remedy for this condition of things, and with a great many materials, by one or another of our processes, the drying or calcining is completed after the material leaves the dryer.

"When absolute dryness is required, or when it is desired that the last 1 per cent., if possible, of any element possessed by the material being treated, should be volatilized and thrown off by the heat carried by it from the dryers, time is the element for success. Now, one of our systems is this: We throw off say 75 or 90 per cent. of moisture or other objectionable element very rapidly by exposure to very high degrees of heat, the released moisture protecting the material, and leave the heat carried by the material to complete the process in its own time, and where the time absorbed costs nothing but the storage room for the necessary time.

"For instance: In drying clay it is delivered into a properly-constructed bin or shed at such a degree of temperature and dryness that the heat possessed by the mass while passing off will vaporize and

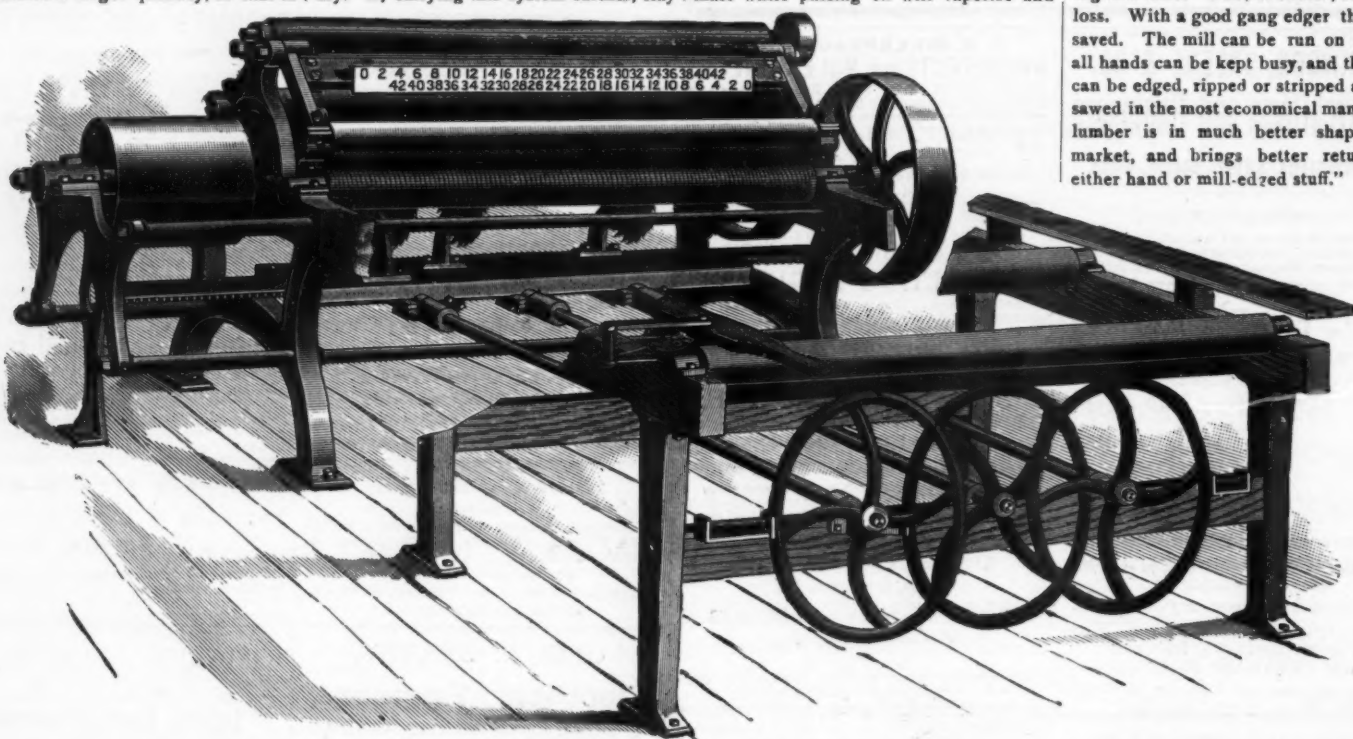
pressed at slight expense, so it will make excellent fuel.

"We can dry tobacco stems and kindred substances."

### The "Kentucky" Gang Edgers.

Probably of all the vast manufacturing interests in the United States none as a class make use of modern improved machinery more than do the manufacturers of lumber. The steam or rope feed, the steam nigger and canter, the steam log conveyor, the steam stacker and the gang edger are necessary adjuncts to the modern saw mill. None of the above-mentioned modern appliances to a saw mill are more important or necessary than the last.

No saw mill nowadays can afford to be without a good gang edger. On this subject is said: "In a small mill, for instance (for the larger ones will admit of no argument), with a capacity of 1,000 feet per hour, it takes two hours daily to edge up its lumber the old way. Computing the profit on the lumber at \$2 50 per 1,000, the two hours consumed in edging would represent a net loss of \$5 per day on the mill's output; besides, there are always several men who cannot be worked to advantage in edging, and who are idle more or less during that time. This, of course, adds to the loss. With a good gang edger this loss is saved. The mill can be run on full time, all hands can be kept busy, and the lumber can be edged, ripped or stripped as fast as sawed in the most economical manner. The lumber is in much better shape for the market, and brings better returns than either hand or mill-edged stuff."



THE "KENTUCKY" GANG EDGER.

a practicable way his sample test would be verified. Also in the way of pulverizing and separating he has been making similar tests.

In a letter to the MANUFACTURERS' RECORD Mr. Cummer says:

"Chance seemingly has put me into a thoroughly new line, and I am sure a knowledge of our experiments and results would interest you very much, and the strange materials and requirements asked for would not only interest you, but would in addition surprise you very much.

"No one else is fitted up to carry on such experiments as we have or will make, and so far, while we have been fitting ourselves by the course we have taken we have helped a great many manufacturers to do either things difficult by their means and expensive, or often impossible, and we are ready and willing to make tests without cost for anybody who has troublesome materials to handle."

This machinery is made by the Frontier Iron Works, of Detroit, Mich., and from a circular just issued by that company we take the following statements as likely to be of interest to our readers:

"We can dry clay and separate it from

as fine as the finest potter's clay may be pulverized, and, by Mr. Cummer's separating processes, be separated and deposited in a bin or bins for use in a fine, dry, purified powder, as fine, if desired, as filtered clay.

"We dry phosphate rock and pebbles very rapidly and cheaply, and also calcine both the rock and pebbles by a very cheap method, and very thoroughly and evenly and without overheating. We do not heat any of the material over 500° to 600° F., yet every atom is thoroughly calcined. We believe this cannot be said for the ordinary methods by which calcining of phosphate rock or pebbles are being done.

"If deposits of phosphate rock or pebbles are found where water is scarce we, by our process, can dry the rock or pebbles, purify same from sand and clay and deliver a purified calcined product without the use of any water.

"We can also calcine gypsum (land plaster), making 'plaster of paris' by exposure to heat from five to ten minutes, instead of eight to ten hours by the old process.

"With some materials it is necessary to discharge them from the dryer quite moist,

throw off such a proportion of moisture as is desired, and will leave the clay containing, thoroughly and evenly distributed, the exact amount of moisture wanted. When the pile or mass is properly ventilated the clay will part with its heat and moisture in a few hours, and be in a more thoroughly even or uniform and satisfactory condition than months of time in a cold pile would make it.

"In the calcining of phosphate rock, gypsum and other materials, the treatment in the dryer, followed by one of our processes, gives a sure and even result (every particle is calcined) that no other process can approach in simplicity, directness, cheapness and result.

"We thoroughly calcine phosphate rock and pebbles, as stated before, without heating any particle of same beyond 500° to 600° F. And while we use as hot a fire as we know how to make, the heat is so thoroughly utilized that the temperature of the smoke flue is not over 120° to 140° F. usually. This is a very rapid process, as the heating process does not continue usually longer than five minutes.

"We can dry sugar-cane, after being

With these facts before us, we take pleasure in calling the attention of our readers to the accompanying illustration of the Kentucky gang edger "A," made by Brennan & Co., Southwestern Agricultural Works, of Louisville, Ky.

This well-known firm makes a specialty of gang edgers, as well as other saw-mill machinery, and has succeeded in placing upon the market an edger which they represent to be strong, well made and accurate, and at a price which does not compel a man to pay as much for his edger as he did for his mill.

They make these machines in two classes, A and B, and for two, three, four or five saws.

The main frame, together with the legs of the tables, are of iron, strongly braced and well proportioned. The mandrel is of 2 15-16 inch selected steel, and has a feather key inserted permanently the whole length between its bearings. It has an outside box contained in a heavy outside supporting frame. The saws (either solid or inserted tooth) are secured to their own collars by four steel set-screws, the heads of which are countersunk into the collars, thus allowing the saws to come



within three inches of each other. The saws are easily removed for refilling. A simple and accurate rack movement, well protected from dust and at all times under immediate control by the operator, allows the saws to be moved to any desired point and securely locked.

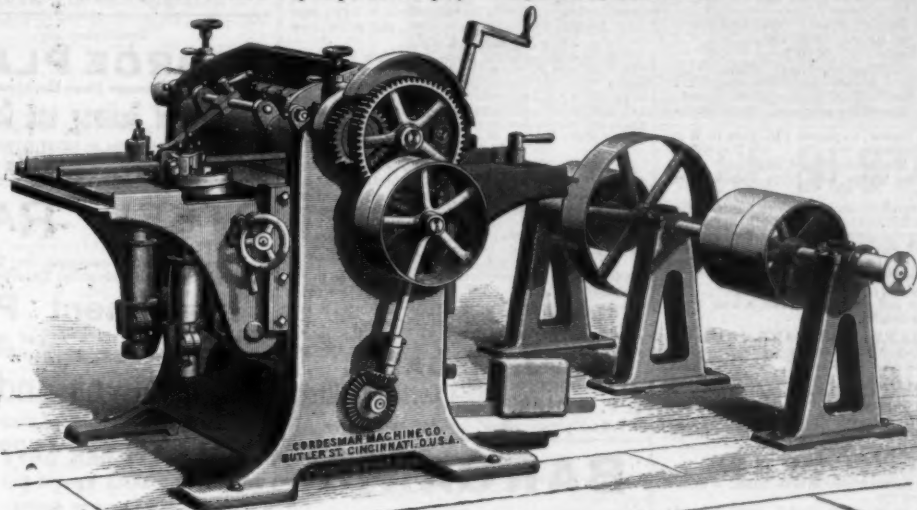
These edgers have power feed and press rolls front and rear. These rolls are at all times in line with the saws, which insures

will, it is stated, produce an exceptionally powerful and reliable feed, which can be stopped and started instantly. The rolls are made of forged steel, have weighted and spring pressure, and can be adjusted as may be required.

The steel matcher spindles revolve in long self-oiling connected bearings, and are provided with composition metal take-up steps for end play. They move up and

It is usual in this class of machines to pass the shavings through the body of the column or base, which some times causes them to choke, especially when the material is wet.

This is guarded against by forming a yoke which supports the cutter-head, and affords a direct discharge for the shavings through an opening on both sides 12 inches wide.



NO. 1 PLANER AND MATCHER.

the lumber passing through the machine in a straight line. On top of the main frame is placed a return roll.

The iron figure board is in one piece, with the numerals plainly cast on its face. Between the front feed rolls and the teeth of the saws is an iron bearing bar reaching across the machine and upon which the pressure of the cut comes. It is adjustable as the saws wear.

These edgers are furnished with front and rear tables all complete. The guides are adjustable for different widths of lumber. The left-hand guide is not shown in cut.

These machines are strictly first-class in all their appointments. Their capacity is from 20,000 to 60,000 feet per day.

#### No. 1 Planer and Matcher.

The planer and matcher illustrated on this page is a product of the Cordesman Machine Co., of Cincinnati, Ohio, and is being introduced by that concern with much success. In the following a description is given of the machine:

It will work 24 1/4 inches wide, 7 inches thick and match 12 inches wide. It has a rate of feed of more than 15,000 lineal feet per day, and is intended for fine surfacing, making flooring, grooving, tongueing and all styles of flat or ordinary carpenter's moulding, such as beading, siding, baseboards, wainscoting, etc.

The frame is one solid casting, giving steadiness and permitting the machine to be driven at a high rate of speed without vibration.

The table is fitted to the frame on an entirely new plan. It has four bearings, each 14 inches long and 18 inches apart. These are provided with adjustable gibs to take up wear, which is apt to occur in time. This construction gives a table steady at every point, and enables the operator to produce a fine quality of work.

The cylinder and journals are solid crucible steel forgings, carefully balanced, turned and ground. It is provided with lips to strengthen the edges of the knives, and has a T slot on two sides for the adjustment of beading, moulding knives, etc.

The pressure bars are patented, and are self-adjusting to the variation in the surface of the lumber. They are placed unusually near the circle of the knives, enabling the operator to plane short stock without clipping the ends.

The feed gear is simple and strong, and

down with the table, and each has a lateral adjustment to suit the different widths of boards

The matcher heads are made of gun metal, with tool-steel milled bits. If preferred, Shimer heads are furnished at small extra cost.

The new patent chip breakers, which are arranged on a new principle, it is claimed, effectively prevents slivering and breaking out of knotty and cross-grained lumber.

All parts required on the table for matching can be readily removed for wide surfacing. Further information and prices will be furnished by the manufacturers upon application.

#### A New Jointer.

The accompanying cut illustrates a new jointer introduced by Goodell & Waters, of Philadelphia. In this machine the manufacturers claim to have embodied some

The cutter-head is four-sided, slotted on two sides for extra cutters.

The guide or fence is one of the new features. It is attached to the infedding table, and fitted in and clamped to a T slot. It can be readily moved across the full width of the machine, and adjusted to any angle. The machine is made in four sizes, 12, 16, 20 and 24 inches wide.

The countershaft has tight and loose pulleys, 8 inches diameter, 4 inches face, and is intended to make 1,000 revolutions per minute.

Prices and farther information will be furnished by the manufacturers from Philadelphia, or from their branch offices at 227 West 12th street, Chicago, Ill., and 29 Spear street, San Francisco, Cal., where a full line of woodworking machinery is carried in stock.

In another column an extensive tract of valuable timbered land is offered for sale.



A NEW JOINTER.

new features that are of especial value.

The tables are 7 feet long, with a well-proportioned base to support their extra length. These are supported and adjusted by two large wedge-seats of proper angle to secure the closest contact with the knives. The tables are clamped to the wedge-seats, and arranged to slide apart so as to get access to the cutter-head.

It is located in Pickens county, S. C., adjoining the North Carolina State line, on waters of Eastatoe and Toxamay. The property includes 16,377 acres of virgin forest lands, and among the timbers are chestnut oak, white oak, red oak, hickory, pine, spruce pine, poplar, dogwood, etc. J. E. Hagood, Charleston, S. C., can be addressed for further particulars.

#### The Davidson Fan.

The Davidson fan, illustrated below, shows in its construction that its manufacturer has devoted much thought to the development of the best manner of exhausting and moving large bodies of air. The peculiar shape of the front half of the blade is said to make every inch of its length operative, while the rear half receives the air cut off by the front and forces it off in



FIG. 1.—THE DAVIDSON FAN.

a straight line without dragging it around with consequent waste of power. As the blades do not overlap each other there is no dead center, and no obstruction of light. These wheels are very strongly built, and are at the same time of unusually light weight. Constructed of the best material, in a thoroughly workmanlike manner, self-oiling and with babitted hubs, they are, it



FIG. 2.—THE DAVIDSON FAN.

is stated, practically noiseless. The manufacturer, the Davidson Ventilating Fan Co., of 53 Pearl street, Boston, is meeting with flattering success in the introduction of its wheel, and has successfully undertaken some of the most difficult work of this character.

The variety of work for which fans may be advantageously used, aside from ventilation, is very large, a few of the uses being the removal of heat, foul air, moisture, steam, dust and smoke, and the drying of lumber, cotton, woolen goods, etc. To those who are interested in any of these uses, the manufacturer will furnish more detailed information on application.



## Up Head of Class A

and still snapping our fingers.

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is our Study.

We can show you how to belt up your energy to the ordinary silver dollar so as to bring your whole fortune into profitable activity.

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Do not content yourself with wondering if THE PENNSYLVANIA LIMITED has this or that machine. WRITE TO US

We have three warehouses filled with machinery for immediate delivery, and are confident we can save you money on any machinery purchase you may contemplate.

Engines, Horizontal. Turret Lathes.  
Engines, Vertical. Fox Lathes.  
Engines, Automatic. Boring Mills.  
Boilers, Horizontal. Switch Planers.  
Boilers, Vertical. Steam Hammers.  
Engine Lathes, from 14 in. to 72 in. swing.  
Drill Presses, from 18 in. to 30 in.  
Planers, with quick return, from 18 in. to 76 in.  
Crank Planers. Hoisting Engines.  
Crank Shapers. Pumping Engines.  
Friction Shapers. Steam Pumps.  
Milling Machines. Feed-Water Heaters.  
Cutting-off Machines. Grinding Machinery.  
Screw Machines. Emery Wheels.  
Bolt Cutters. Chucks and Face Plates.  
Belting and Lacing. Waste by the Bale.  
Wood Mortisers. Wood Tenoners.  
Moulding Machines. Matching Machines.  
&c., &c., &c.

In fact, everything in the way of Machinery for Motive Power, and for working in Iron or Wood. Correspond freely with us.

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(Successors to H. B. Smith Machine Co., Phila.)

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### CORLISS ENGINE.

Diameter of Cylinder, 14 inches; Length of Stroke, 30 inches. Used about three years; good as new; can be seen running.

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### Second-Hand Machinery FOR SALE.

Steam Passenger and Freight Elevator complete, with double engines; drum walnut cab; all attachments complete; cost \$3,400, for \$650.  
Two Buckeye Engines, automatic, 65 and 35 H.P. Woodworking Machinery. Ax-Handle Lathes.  
72x18 Steel Tubular 64 1/2-in. tubes complete; used 20 months; also 16x48 Tubular, complete.  
25 H.P. Fire Box Boiler, 34 1/2-in. tubes complete.  
Stationary Tubular, 11x24, complete.  
Two-Flue Boilers, 20x40, 24x44, 24x48, complete.  
Engines 10, 12, 14, 16, 20, 25, 30, 40, H.P. complete.  
Steam Pumps, Shafting, Pulleys, Hangers, Belting, Ingersoll No. H Rock Drill.  
Iron Planers 20 in. x 22 in. x 5 ft. and 30x36x7 ft. Miscellaneous Machinery of all kinds.  
Correspondence solicited.

### ECONOMY MACHINERY CO.

104 East Pearl Street, CINCINNATI, O.

### MACHINERY IN STOCK.

ENGINE LATHES.—64 inches x 22 feet; 56 in. x 18 ft.; 50 in. x 20 ft.; 48 in. x 18 ft.; 45 in. x 12 ft.; 35 in. x 12 ft.; 29 in. x 15 ft.; 24 in. x 20 in.; 1 each 24 x 10 ft., 12 ft. and 16 ft.; 1 each 17 in. x 6 and 8 ft.; 1 each 16 in. x 6, 8 and 10 ft.; 1 each 14 in. x 6 and 8 ft.; 6 1/2 in. x 5 ft.; 2 each 11 in. x 4 and 5 ft.; 2 each 10 in. x 4 ft., power or foot-power; 1 16 in. x 6 ft., 15 in. x 6 ft. 14 in. x 5 ft. Fox Monitor Lathes; 1 15 in. x 6 ft. Square Arbor Fox Lathes; 1 each 12 in. x 5 ft., 14 in. x 6 ft., 15 in. x 6 ft., 18 in. x 6 ft. Turret Lathes; 1 each 14 in. x 6 ft., 16 in. x 6 ft., 18 in. x 6 ft. and 8 ft. 21 in. x 8 and 10 ft. Engine Lathe Taper.  
1 Iron Planer, 16 in. x 16 in. x 3 ft.  
1 Planer, 30x30 in. x 4 ft. and 22x22 in. x 5 ft.  
1 " 42x24 in. x 3 1/2 and 6 ft.  
1 " 30x30 in. x 6 ft.  
1 " 32x32 in. x 10 ft. 42x36 in. x 12 ft.  
1 " 36x36 in. x 10 ft.  
1 " 72x60 in. x 15 ft. and 50x50 in. x 17 ft.  
1 " 36x30 in. x 9 ft., with one head.  
1 " 42x42 in. x 12 ft., with two heads.  
Friction Shapers, 15 in., 22 in., 32 in.  
Crank Shapers, 13, 16, 17, 20, 24, 28 in. adj. stroke.  
1 each Nos. 1, 2, 3, 4 Wire Feed Screw Machines.  
1 each Nos. 3 to 8 Screw Machine. Power Feed.  
1 each 2, 3, 4 and 6 Spindle Gang Drills.  
1 Crank Planer, 12 No. 2 Lincoln Pat. Millers.  
1 each Nos. 51, 52 and 53 Ferracute Presses.  
1 No. 3 Stiles & Parker Geared Press.  
1 No. 2 1/2 in. Fowler Press. 10 Foot and Power.  
1 No. 1 Bliss Foot Presses. (Presses).  
12 Punching and Shearing Machines, assorted.  
1 Bolt Cutter, each 1/2 to 1 in. and 3/4 to 2 in.  
1 36 in. Gear Cutter.  
1 each 48, 60 and 72 in. Radial Drill.  
1 New horizontal Boring Machine with facing attachment. Newark Mach. Tool Co., makers.  
1 48 in. Gear Cutter. 1 Power Mortising Machine.  
1 50 in. Pulley Lathe. 2 Profiling Machines.  
1 10x12 in. Valley Automatic Engine.  
1 36 in. Upright Drill. 3 Cam Cutters.  
Send for List of New and Second-Hand Machinery.

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### BARGAINS.—SECOND-HAND TOOLS.

We have the following second-hand Machine Tools, taken mainly in exchange for those of our manufacture. We will sell them low.

17 in. x 8 ft. Putnam Lathe. Good Order.  
18 in. x 6 ft. Engine Lathe. Good Order.  
18 in. x 10 ft. Engine Lathe. Good Order.  
20 in. x 12 ft. Ames Lathe. Good Order.  
1 24 in. x 8 ft. L. W. Pond Lathe. Good Order.  
1 32 in. x 12 in. x 8 ft. and 9 ft. L. W. Pond Planer. G.O.  
24 in. x 16 ft. Lathe. Fair Order.  
10 in. Traveling Head Shaper. Good Order.  
24 in. x 24 in. x 4 ft. Planer. Good Order.  
32 in. x 32 in. x 8 ft. L. W. Pond Planer. Good Order.  
36 in. x 36 in. x 7 ft. Matawan Planer. Good Order.  
1 Hendey 3-Spindle Drill Press. Good Order.  
1 24 in. Hendey Drill Press.  
1 24 in. B. G. P. F. Drill Press. Good Order.  
1 24 in. Plain Drill Press. Good Order.  
3 34 in. Drill Presses. Good Order.  
2 36 in. B. G. Drill Presses. Good Order.  
2 36 in. B. G. New Haven Drill Presses. G. O.  
1 24 in. Acme Single Drill Press. Good Order.  
2 750-lb. Steam Hammers (Bement, Miles & Co.) Good Order.

1 Punch, 18-in. throat, to punch 1 in. hole in 3/4-in. iron. At Order.  
1 Plain Milling Machine. Good Order.  
1 Niles Universal Miller, 6-in. Univ. chuck fitted. Good Order.

We have in stock or in process of construction at our Works a full line of Engine Lathes, Planers, Crank and Geared Shapers, Drill Presses, Improved Cabinet, Fox, Monitor, Square Arbor and Turret Chucking Lathes, Valve Millers, Cock Grinders, Slide Rests, etc.

Our Stock is constantly changing.

Write for full particulars and prices.

Outfits a specialty.

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### SECOND-HAND MACHINERY ON HAND.

Planer, planes 54 in. wide, 24 1/2 ft. long, 2 heads, Betts Machine Co.  
Planer, planes 72 in. wide, 12 1/2 ft. long, 2 heads, L. W. Pond Machine Co.  
Planer, planes 36 in. wide, 10 ft. long, L. W. Pond.  
Planer, planes 30 in. wide, 8 ft. long, D. W. Pond.  
Planer, planes 30 in. wide, 8 ft. long, Harrington.  
Planer, planes 30 in. wide, 5 ft. long, Cove M. Co.  
Planer, planes 24 in. wide, 6 ft. long, Harris.  
Planer, planes 24 in. wide, 5 ft. long, L. W. Pond.  
1 Planer, 24 in. wide, 4 ft. long, L. W. Pond. New  
1 Planer, 24 in. wide, 5 ft. long, " "  
1 Planer, 24 in. wide, 6 ft. long, " "  
1 Planer, 28 in. wide, 6 ft. long, " "  
1 Planer, 28 in. wide, 8 ft. long, " "  
1 Planer, 32 in. wide, 10 ft. long, " "  
Gap Engine Lathe, 28 in. swing over shears, 56 in. swing in gap, 26 ft. bed, English make.  
Engine Lathe, 54 in. swing, 21 ft. bed, Putnam.  
Engine Lathe, 24 in. swing, 20 ft. bed with three tool shafting rests, D. W. Pond.  
Engine Lathe, 28 in. swing, 8 ft. bed, Sheppard.  
Engine Lathe, 16 in. swing, 8 ft. bed, Wheeler.  
Engine Lathe, 15 in. swing, 8 ft. bed, Porter.  
4 Engine Lathes, 20 in. swing, 8 ft. bed, Ames.  
Shaping Machine, 9 in. stroke, New Haven Co.  
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## TRADE NOTES.

THE Ball Engine Co., of Erie, Pa., report orders for 32 engines aggregating 3,370 horse-power, in which are included simple, cross and tandem compound type.

BYRAM & CO., of Detroit Mich., manufacturers of the Colliau cupola furnace, have recently made shipment of one furnace, together with other foundry supplies, to the Leland Stanford, Jr., University, Palo Alto, Cal.

W. A. GILES, 416 Lewis Block, Pittsburgh, Pa., has arranged to handle McIntosh & Seymour, Porter and Case high speed automatic engines, Goubert's feed-water heaters and Stratton separators, also Wing's ventilating apparatus, in that territory. Mr. Giles is favorably known as a contracting electrical and mechanical engineer.

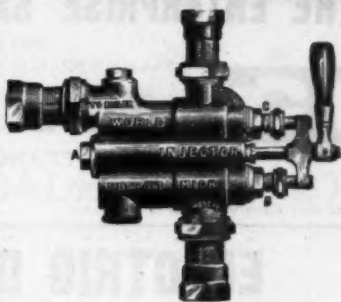
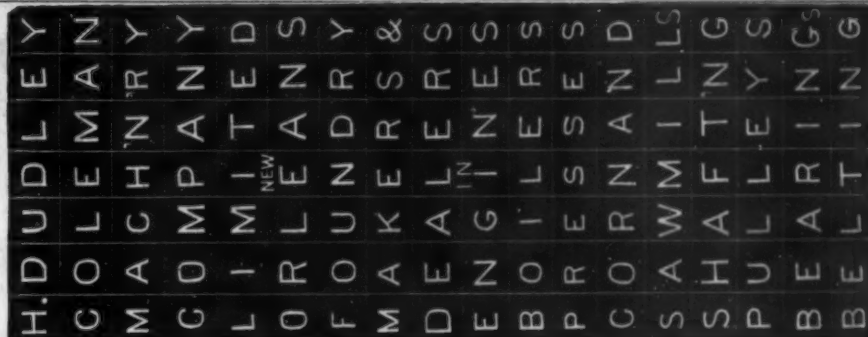
THE Blakeslee Manufacturing Co., of Du Quoin, Ill., announce that to accommodate its growing trade a branch office has been established at No. 419 Walnut street (opposite Southern Hotel), St. Louis, Mo., which will be in charge of Mr. J. T. Milligan. This office will carry in stock steam jet, bilge and direct acting steam pumps, with a stock of repairs for same, and will be prepared to fill orders. The Du Quoin (Ill.) Iron Works Co.'s coal-mining and veneer-cutting machinery will also be sold from this point.

THE annual meeting of the stockholders of the Rockford (Ill.) Electric Manufacturing Co. was held January 12, 1892. The report of the secretary and treasurer showed the affairs of the company to be in a very satisfactory condition and the future prospect bright. The officers and directors for the ensuing year will be: C. M. Haven, president; G. E. Knight, vice-president; W. B. Roberts, secretary-treasurer and general manager; George A. Mayo, superintendent and electrician; G. F. Penfield, W. F. Woodruff, E. H. Marsh, J. W. Calkins, directors.

THE fire which destroyed one-half of the Asylum for Insane at Pontiac, Mich., was chiefly remarkable for the fact that, although the flames spread with astonishing rapidity, not one of the several hundred demented female patients who occupied that particular wing of the building sustained the slightest injury. There was no loss of life. To the foresight of the asylum authorities in recently equipping the buildings throughout with some very ingeniously devised fire-escapes this immunity from loss of life is due. These escapes were put up by E. T. Barnum, of Detroit, Mich., and were covered with wire guards, preventing the patients from throwing themselves over.

THE Berlin Iron Bridge Co., of East Berlin, Conn., is completing a new machine shop for the Bridgeport Machine Tool Co. at Bridgeport, Conn. The building is made entirely of brick and iron, divided into two parts, each 40 feet wide, the total length being 96 feet. One portion is two stories high, the roof and floor being designed for light work, while the opposite half of the building is of the same height, but the second floor is omitted, so that it may be used as an erecting shop. The erecting shop is controlled by a traveling crane. The building, when completed, will be, it is said, one of the most perfect and best designed machine shops in the New England States.

"SHORTHAND AND TYPEWRITING."—This is the title of a new work by Dagald McKillop, which opens with a brief sketch of shorthand history, followed by practical suggestions to the learner of the art which will aid any one acquiring it. Following this a chapter is devoted to the amanuensis,



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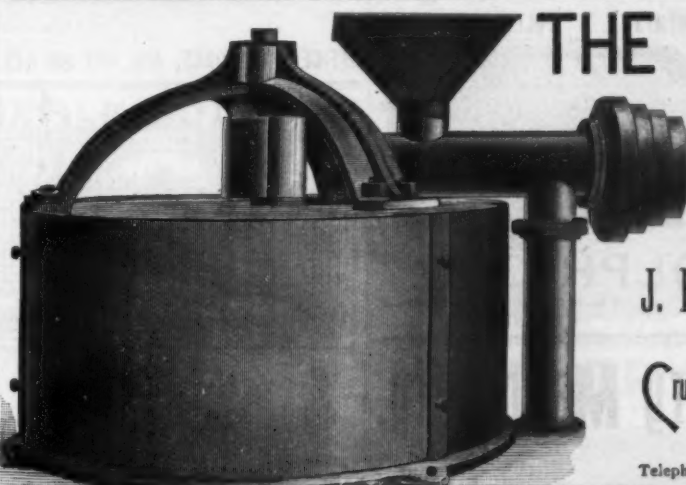
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which should certainly be read by every person endeavoring to succeed in this work, for it shows how to be a successful shorthand amanuensis. The chapter following is for the reporter. The suggestions to the newspaper reporter are excellent, and one doing court reporting should have the points brought out by this experienced writer. Next is taken up typewriters and typewriting, and in connection with this is given fine illustrations of the leading machines and other appliances used in connection with typewriting work, with suggestions as to the proper use of the leading machines, the acquiring of speed, etc. Price 40 cents. Sent by mail, post paid, by the publishers, Fowler & Wells Co., 777 Broadway, New York.



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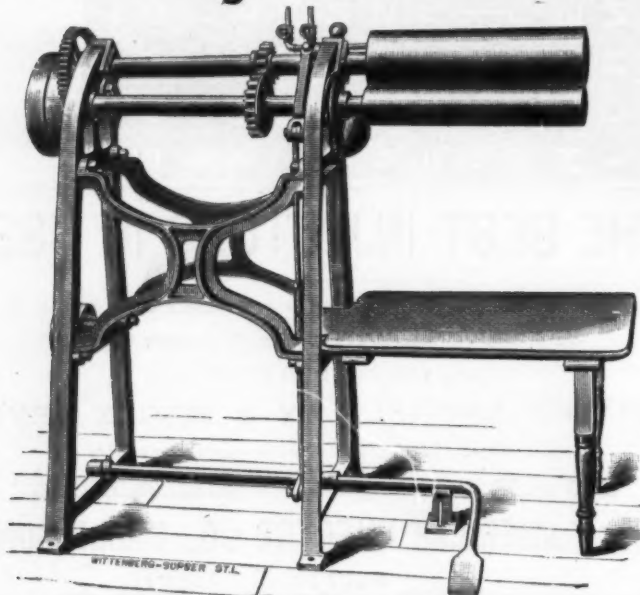
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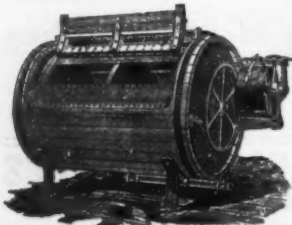
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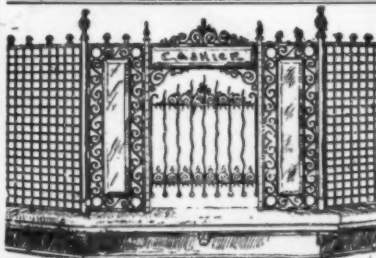
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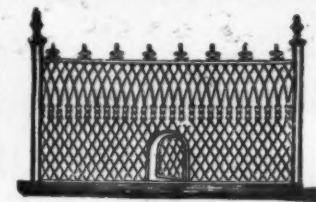
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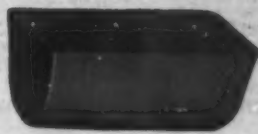
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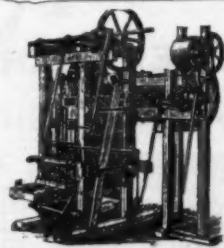
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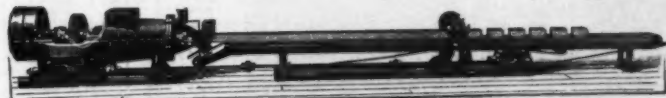
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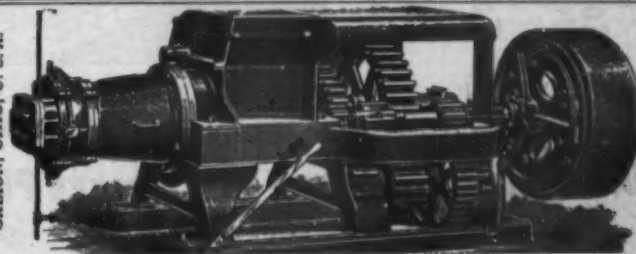
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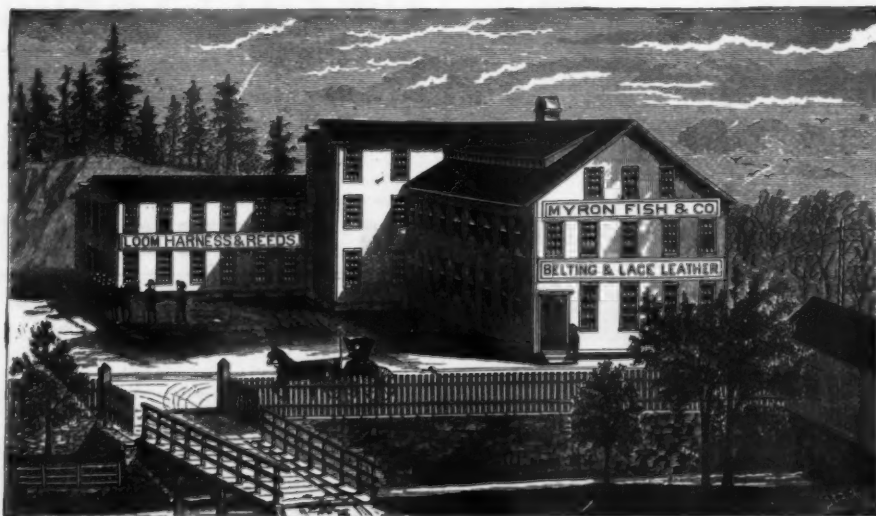
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"WINSTON-SALEM is the most important manufacturing town in North Carolina."

"SHE has 16,000 people, 114 factories—almost a factory for every hundred people."

"HERE is more activity in real estate, industries and commerce than almost anywhere else in the South."

"THE county is free from debt, and the city, county and school tax is only 66 $\frac{2}{3}$  cents on the hundred dollars—40 per cent. valuation at that."


"MONEY grows here. Capitalists, manufacturers, merchants, builders, farmers—all can find most profitable fields for investment."

"DELAYS are costly. The Hotel Zinzendorf, one of the most magnificent hotels in any small city, will be completed before long; the Roanoke & Southern Railroad will soon be in operation between the twin cities and Roanoke, Va.; there will be finished before summer numerous public and business buildings, and all these improvements will inevitably enhance the value of real estate."

"WINSTON-SALEM'S conveniences—paved streets, electric street cars, electric lights, gas, water, sewers, etc.—are as complete as in many cities of ten times the population."

"FOR salubrity of climate, fertility of soil, honesty, frugality, industry and thrift of her people, this section of North Carolina is especially famous."

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 You can't well afford to lose sight of this solid, growing town of WINSTON-SALEM. Write the CHAMBER OF COMMERCE here for full particulars, as to advantages for manufactures, plats, prices of real estate, or any other information.

# As A LOCATION for Manufactures

Of Iron and Wood and for General Industrial and  
Business Enterprises,

## FRONT ROYAL, VA.

INVITES INVESTIGATION.

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Its location, at the junction of the Norfolk & Western Railroad (Shenandoah Valley line) and the Richmond & Danville's branch, give it excellent transportation facilities. It is only a few hours' ride distant from Washington. The Norfolk & Western's direct line to Washington will be built from Front Royal.

---

*There is no Finer Agricultural Country in the World than the Famed Shenandoah Valley, in which Front Royal is Located.*

---

A WIDE RIVER WITH SWIFT CURRENT FURNISHES WATER POWER  
AND MAKES DRAINAGE PERFECT.

---

Front Royal is a Prosperous Town, with an Extensive Mercantile Business  
and Many Manufacturing Enterprises in Operation and  
Under Construction.

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INVESTIGATION OF ITS ADVANTAGES IS INVITED BY THE

Front Royal--Riverton Improvement Company,  
FRONT ROYAL, VIRGINIA.



# The Winston Land & Improvement Company.

Charter granted by Act of Legislature, Session of 1887. Ratified March 4, 1887, Chapter 82.

Authorized Capital, - - \$1,000,000.

Present Capital Stock \$125,000. All Subscribed and Paid Up.

## OFFICERS:

G. W. HINSHAW, President, of Hinshaw & Medearis, Wholesale Merchants; Vice-President People's National Bank, Winston, N. C.

DR. W. L. BROWN, Vice-President, of Brown Brothers, Tobacco Manufacturers, Winston, N. C.

W. F. TROGDON, Secretary and Treasurer, North Wilkesboro, N. C.

## BOARD OF DIRECTORS:

GEO. W. HINSHAW, Winston, N. C.

MAJ. CHANNING M. BOLTON, Chief Engineer Richmond & Danville Railroad, Washington, D. C.

P. H. HANES, of P. H. Hanes & Co., Tobacco Manufacturers, Winston, N. C.

COL. J. M. WINSTEAD, Cashier Piedmont Bank, Greensboro, N. C., and President H. P. Scales Tobacco Co., Atlanta, Ga.

A. A. FINLEY, ESQ., Mayor of North Wilkesboro, N. C.

## ATTORNEYS:

T. B. FINLEY, ESQ., North Wilkesboro, N. C.

HON. C. B. WATSON, Winston, N. C.

HON. J. C. BUXTON, President First National Bank, Winston, N. C.

HON. W. W. BARBER, Wilkesboro, N. C.

THE COMPANY OWNS THE NEW TOWNSITE OF

# NORTH WILKESBORO,

## NORTH CAROLINA,

Consisting of 1,036 acres, and also owns 4,100 acres of Mineral and Timber Lands in Wilkes County, which property is now being developed. Townsite purchased November 11, 1890. Property put on market at private sale and first lot sold May 12, 1891. North Wilkesboro chartered by the legislature March 4, 1891.

188 Lots sold at Public Auction, December 2, 1891, one fourth of which will be built on at once.

Over sixty buildings already on the townsite.

Already established, one large, handsome, well-furnished and well-kept Hotel; one Saw Mill, Planing Mill, Door and Sash Factory combined; two Saw and Planing Mills; two Brick-yards; one Tan-yard; one Newspaper, the "North Wilkesboro News." Charter was obtained from the last General Assembly for the Bank of North Wilkesboro; the capital stock, \$50,000, has been subscribed, and bank will open for business before March 1st, 1892; fourteen Stores and one large Livery Stable.

Ten miles of streets graded.

Manufacturing sites will be donated and stock subscribed to such legitimate enterprises as may be advantageously located here.

North Wilkesboro, 75 miles west of Winston-Salem, on the Northwestern North Carolina Railroad, is the most important trading point between Winston-Salem and Bristol,

Tenn., and is in the center of the great undeveloped mineral and timber district of Northwestern North Carolina, being by United States postal map, on an air line, 75 miles southeast of Bristol, Tenn., 45 miles east of Cranberry, N. C., 40 miles north of Statesville, 45 miles northeast of Hickory, 90 miles northeast of Asheville, 45 miles southwest of Mt. Airy, N. C., and 80 miles north of Norfolk & Western Railroad, in the Valley of the Yadkin, between the Brushy mountains on the South and Blue Ridge on the north. The best located, watered and drained town in North Carolina.

Her climate is of unsurpassed salubrity and healthfulness. Fresh water and mineral springs abound, and the 328 miles of water courses in Wilkes County furnish a water power of almost incalculable magnitude.

Home seekers, health seekers, and wood and iron manufacturers, will do well to investigate North Wilkesboro's advantages.

PLATS, PRICES AND ANY DESIRED INFORMATION PROMPTLY FURNISHED ON APPLICATION TO

W. F. TROGDON, Secretary and Treasurer,

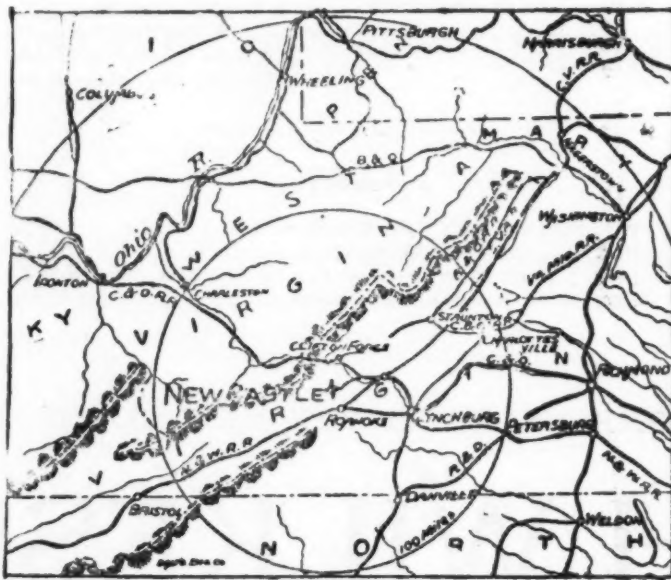
NORTH WILKESBORO, N. C.

# NEW CASTLE, <sup>Craig</sup> County, VA.

## • THE IRON BONANZA, •

Convenient to Fuel Supply.

*A City of Immense  
Possibilities without  
a Rival in all that  
goes to Create  
Wealth and Power.*



*A Home for Invalids  
in which to  
Lengthen out their  
Lives, and for all  
to be and Remain  
Healthy & Happy.*

*PARADISE OF THE HUNTER AND HEALTH SEEKER.*

**Future City of the Alleghanies and  
Center of Iron Production.**

**Commodious Hotel for the Entertainment of Summer Guests.**

**2,000 TOWN LOTS FOR SALE.**

FOR INFORMATION ADDRESS

**A. E. HUMPHREYS, Prest., New Castle, Va.**



## NORFOLK, VA.

## THE GREAT SOUTHERN SEAPORT.

Attention of manufacturers and others seeking investment or establishment in the South is called to the following facts:

Norfolk has the most magnificent natural harbor of the Atlantic Coast, having no bar to block its entrance, being within 25 miles of the ocean, sheltered from all vicissitudes of weather, always free from ice, with sufficient depth of water for the deepest draft vessels.

Hampton Roads, at the confluence of the James and Elizabeth rivers with the Chesapeake bay, is easy of access, navigable for vessels of any size or draft.

It has been designated by Congress as the rendezvous for the navies of the world in 1892-'93.

A 26-foot channel, well marked with buoys and light houses, leads to the wharves of Norfolk, and above the city to the Navy-yard.

Seven broad-gauge and two narrow gauge railroads, controlling an aggregate of over 17,000 miles, put Norfolk in connection with all the points reached by railroads in this country, and two

The water supply is derived from large lakes of spring water seven miles distant, good not only for household use, but admirably adapted for manufacturing purposes, being absolutely free from all those substances which corrode boilers.

The climate, tempered by the proximity of the Gulf Stream, is mild. There is hardly ever ice or snow to interfere with out-door work or exercise.

The city is lighted with electric lights, and has as fine a fire and police department as any in the country.

All denominations are well represented in churches.

There are two good hospitals, one in charge of the Sisters of Charity, and the other under the Protestant organization of the city.

Educational advantages are excellent, there being a thorough system of public schools, together with numerous private seminaries for both sexes.

There are two good theatres, at which the best companies stop on their pilgrimages from the North to the South.

This is one of the largest pine lumber markets in the South; 350,000,000 feet were shipped in 1890.

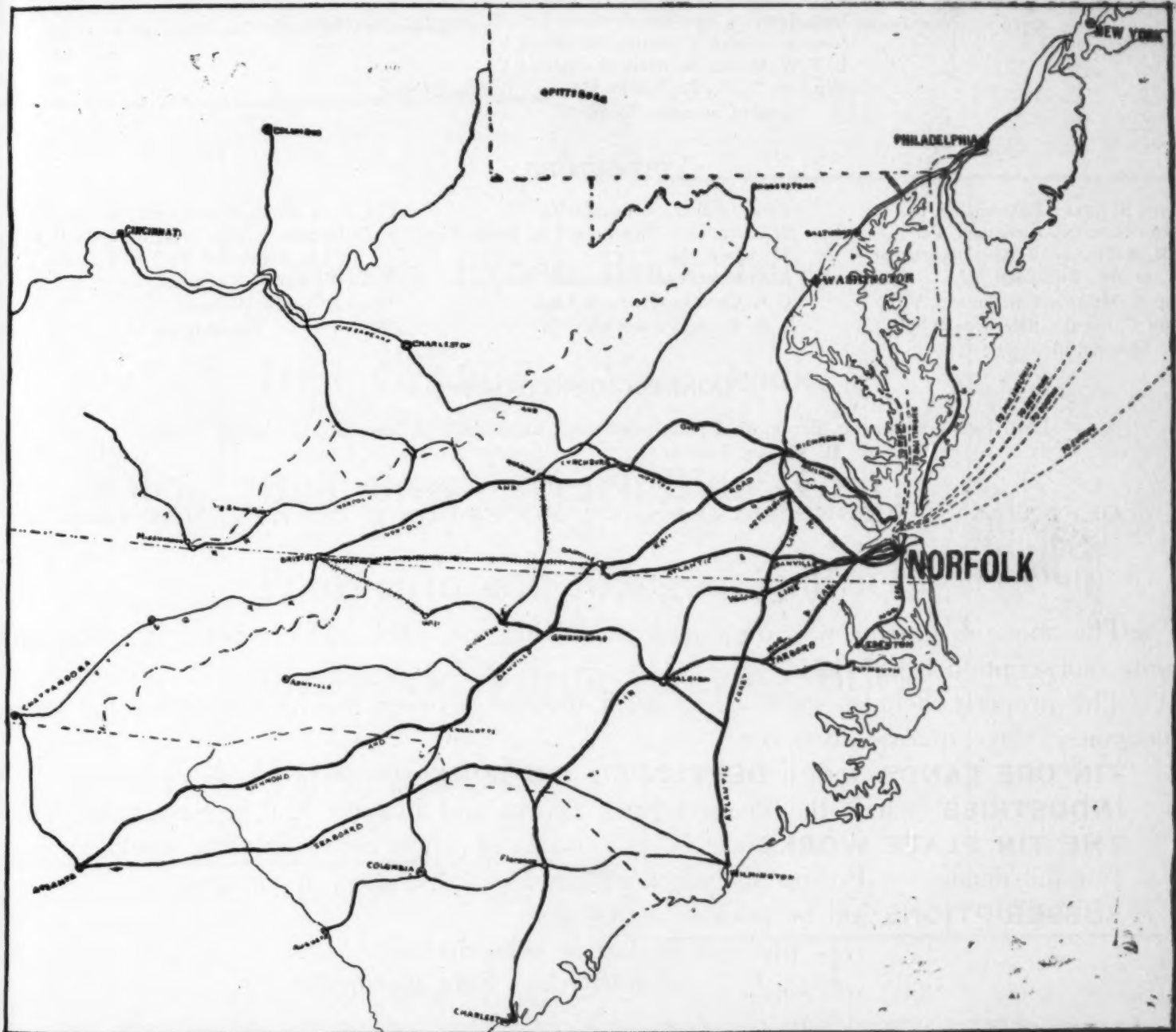
The best bituminous coal and coke are supplied by the C. & O. R. R. and N. & W. R. R.

Pig iron is delivered here by these two railroads.

Roller iron and all of its products can be promptly and cheaply freighted by water to all of the leading seaports.

600,000 bales of cotton are annually marketed here, which makes this the most desirable point for the manufacture of cotton goods in the United States, superior to inland towns throughout the cotton belt, because a factory located in these is dependent on the local product marketed in three or four months, after which it has to draw from distant points or carry a sufficient stock for the year, or if the quality or grade in the locality is unsuitable, it is subjected to the expense of freight from distant points; but Norfolk being a large cotton market, not only furnishes an assortment of grades and quality, but enables the manufacturer to purchase his stock all the year.

It is superior to other seaports from its accessibility to New York, Boston and other markets, or such supplies as the manufacturer frequently needs on short notice, while its railroad lines to the interior distribute goods to all points.



canals connect with the Sounds through the Carolinas.

First-class steamship lines ply to Boston, Providence, New York, Philadelphia, Baltimore, Washington, Richmond and other points on the Coast and Sounds.

Norfolk is within 20 hours of Boston by rail and 40 by water.

12 hours of New York by rail and 21 by water.

10 hours of Philadelphia by rail and 18 by water.

8 hours of Baltimore by rail and 12 by water.

7 hours of Washington by rail and 12 by water.

2½ hours of Richmond by rail.

23 hours of Cincinnati, and 34 hours of Chicago and St. Louis by rail.

A regular line of passenger and freight steamships ply to the Brazilian ports, and steamships, chartered mostly for the carriage of freight, ply to Liverpool and other European ports.

In 1883 the aggregate trade of Norfolk was placed at \$38,200,436, while five years later, in 1888, it had risen to \$65,017,696; in 1889 it increased to \$75,000,000, and in 1890 to \$100,000,000. The vessel tonnage of Norfolk in 1870 was 13,303 tons, cargoes valued at \$286,594; in 1880 it increased to 103,608 tons, valued at \$11,116,595; in 1887, 237,584 tons, valued at \$14,714,404; for the year 1890 the tonnage reached 582,846, valued at \$15,197,095.

It will be hard to find a parallel case in this country in two decades showing an increase of tonnage from 13,303 tons in 1870, valued at \$286,594, to 582,846 tons in 1890, valued at \$15,197,095.

The population of Norfolk, including Portsmouth, Berkley and other suburbs, is 70,000; the increase within the city limits has been 61 per cent. in the last ten years.

This increase, with the growth of business and enhancement of value in property of all kinds, is turning the attention of capitalists and investors to this point.

The City of Norfolk has a complete system of sewerage and is well paved.

The healthfulness of the climate, as exhibited by the death rate, is not surpassed by any city in the country, the percentage being in 1890 16.90 to the 1,000.

In addition to the manufacture of cotton and iron, there is at Norfolk opportunity for profitable manufacture of furniture and all articles made of wood, such as ash, oak, pine, poplar, cedar, cypress, juniper, gum, and for the manufacture of safes, stoves, hardware, sash, door and blinds, etc.

The cost of labor ranges from \$1 to \$1.50 per day for unskilled men, and \$2 to \$3 for skilled men; females 50 cents to 75 cents a day unskilled, and 75 cents to \$2 a day for skilled; boys 25 cents to \$1 per day; girls 25 cents to \$1.25 per day.

The above quotations are for white labor.

Unskilled negro labor can be employed at 80 cents to \$1 for men and 50 cents for women.

Norfolk has been exempt from those labor troubles and strikes which have characterized Northern manufacturing cities.

The surrounding country being the great vegetable-growing section of the seaboard, and the rivers and bays being filled with the finest fish and oysters, make living cheap and healthy.

Although in banking facilities Norfolk is fairly well supplied, there being nine banks with an aggregate capital of about \$1,000,000 and aggregate deposits of about \$3,000,000, there is, however, a good opening for another bank.

Norfolk offers a field for the establishment of jobbing houses in dry goods, boots, shoes, hats, caps, notions, drugs, tinware and all other kinds, excepting wholesale groceries, in which she is well supplied.

The country lying to the southward west of Norfolk furnishes the markets to which goods from here are distributed in exchange for cotton, corn, wheat, peanuts and other crops.

The NORFOLK INDUSTRIAL DEVELOPMENT CO. has been organized for the purpose of furnishing information and assisting the establishment of manufacturing enterprises.

Free sites can be obtained on the railroad lines around the city, and reasonable subscriptions will be made to the stock of manufacturing enterprises, provided they are meritorious, but no proposition will be entertained from any but bona fide concerns, using good machinery and stocked on a business-like basis.

Capital invested in machinery is exempted from taxation for ten years, and will probably always continue so.

For further particulars, address

WALTER F. IRVINE,

SECRETARY NORFOLK INDUSTRIAL DEVELOPMENT CO.

# The Savernake Steel & Tin Plate Co.

OF SAVERNAKE (TRIFORD P. O.), ROCKBRIDGE COUNTY, VIRGINIA.

Capital \$2,000 000.

Shares \$100. Par Value.

## OFFICERS.

TITUS S. EMERY, President, Philadelphia, Pa.  
THOS. DUNLAP, Vice-President and General Manager, Savernake, Va.  
ASHTON STARKE, Treasurer, Richmond, Va.  
L. T. W. MARYE, Secretary, Richmond, Va.  
WILKINS TRICK, Tin Works Manager, Hubbard, Ohio.  
Late of Swansea, Wales.

## DIRECTORS.

|  |   |  |
|--|---|--|
| TITUS S. EMERY, Philadelphia, Pa.                              | THOS. DUNLAP, Savernake, Va.                        | COL. A. S. BUFORD, Richmond, Va.                               |
| E. A. SAUNDERS, Richmond, Va.                                  | E. B. ADDISON, Vice-Prest. City Bank, Richmond, Va. | E. D. HOTCHKISS, Gen. Freight Agent C. & O. Ry., Richmond, Va. |
| J. R. MACMURDO, Traffic Department, C. & O. Ry., Richmond, Va. | ASHTON STARKE, Richmond, Va.                        | L. T. W. MARYE, Richmond, Va.                                  |
| GEO. B. MCADAMS, Richmond, Va.                                 | C. N. CLINGAN, Hubbard, Ohio.                       | WILKINS TRICK, Hubbard, Ohio.                                  |
| JOHN C. PARKES, Bates Iron & Steel Co., Chicago, Ill.          | T. A. HICKS, Philadelphia, Pa.                      | W. C. DICKEY, Philadelphia, Pa.                                |

## LONDON DIRECTORS.

LORD HENRY BRUDENELL BRUCE, M. P., Chairman, Loch Laird Estate & Mineral Co., Limited, London.  
C. W. M. WILSON, London. SAMUEL SADDINGTON, London.

OFFICE AND WORKS, SAVERNAKE, ROCKBRIDGE COUNTY, VIRGINIA.

The above Company was organized at Washington, D. C., December 17th, 1891, and invites subscription to its stock.

The property includes some 9,000 acres, divided between iron ores (suitable for steel), manganese, clays, quarries, &c., &c.

**TIN ORE LANDS** with a **DEVELOPED TIN MINE** now in profitable operation.

**INDUSTRIES** include the Pressed Brick Works and Planing Mill at Savernake, Va.

**THE TIN PLATE WORKS** will be of capacity of 3,600 boxes tin plate weekly.

For full details see Prospectus, which will be forwarded upon application.

**SUBSCRIPTIONS** will be payable as follows:

|    |           |                                |
|----|-----------|--------------------------------|
| 25 | per cent. | at date of subscription.       |
| 25 | "         | in thirty days from allotment. |
| 25 | "         | " sixty " " "                  |
| 25 | "         | " ninety " " "                 |

The Company reserves the right to reject any subscriptions.

A discount of five per cent. will be made for subscriptions paid in full in cash on receipt of notice of allotment.

Subscriptions may be sent to the Treasurer, ASHTON STARKE, Esq., Richmond, Va. For foreign subscriptions to C. W. M. WILSON, Esq., 153 Fenchurch Street, London, or SADDINGTON & Co., 30 Lime Street, London, and all inquiries for further information, to the office of the Company, addressing:

**THE SAVERNAKE STEEL & TIN PLATE CO.**

Savernake, Triford P. O., Rockbridge Co., Va.



THE

# Savernake Pressed Brick Co.

SAVERNAKE, VA.

THOS. DUNLAP, PRESIDENT, SAVERNAKE, VA.

S. N. LETCHER, SECRETARY, LEXINGTON, VA.



Capacity 40,000 Brick daily,

On hand or to order,

High-Grade Red-Face Brick,

Ornamental or plain,

Buff, Brown, Peach Blow, Gray,

Pompeian and Manganese Brick,

Fire-brick, Vitrified Paving Brick,

Tiles, Etc., Etc.




For prices, samples and testimonials as to quality and beauty, address

THE SAVERNAKE PRESSED BRICK CO.

Triford P. O.,

ROCKBRIDGE COUNTY, VA.

 Above grades of Brick delivered at Chicago, Boston, New York or Philadelphia at favorable prices and rates.

EDWARD F. POWERS,  
President.

JOHN M. BROOKS,  
Manager.

# MIDDLESBOROUGH

Is located in Bell County, Kentucky, near the junction of the three States of Virginia, Kentucky and Tennessee with the Cumberland Mountain at a point where that mountain is most heavily freighted with its precious stores of Coking Coals, Iron Ores and Limestone.

It is 1,080 feet above sea-level. Its limits extend virtually from Cumberland Gap westward six miles, with a width of three and a-half to four miles north and south.

Through the tunnel at Cumberland Gap, towards which all railways for this region converge, communication is established with the seaboard and the entire system of railway and water transportation in America. Middlesborough also enjoys Postal, Telegraph, Express, Banking and Insurance Facilities with all the business world.

## MANUFACTURERS AND INVESTORS

Are invited to make a thorough investigation of the MINERAL AND TIMBER RESOURCES of

## MIDDLESBOROUGH, KY.

For in the origin and development of the town the primary cardinal points why a town should be built exist here to a pre-eminent degree.

Middlesborough occupies a POSITION second to none in the United States as regard coal and iron.

The Natural Resources are in such wonderful profusion and are so easy of development that it is only a question of time when a great Industrial and Manufacturing city will surely be built to consume the great Mineral and Timber Wealth which nature has deposited here with such a prodigal hand.

There are already built:

Two Large Iron Furnaces,  
An Immense Steel Plant,  
A Mammoth Tannery (in operation),  
A Brewery, Cold-Storage and Ice Manufacturing Plant,

A Belt Railroad, 23 miles long,  
Water Works, Electric-Light Plant,  
Foundries, Saw Mills, Planing Mills,  
Furniture and Bent Wood Factories,  
Telephone and Electric Street Car Systems

And other smaller plants of various descriptions.

**THE MIDDLESBOROUGH TOWN LANDS COMPANY,**

MIDDLESBOROUGH, KY.

Address all communications to the Manager.



# OF INTEREST TO INVESTORS.

An Investment in **FLORIDA PHOSPHATE MINING**, Offering a **CONSERVATIVE INVESTMENT** Combined with an Unparalleled Opportunity for **PROFITS**.

## THE LA PIERRE PHOSPHATE COMPANY,

of BOSTON, MASS., and TALLAHASSEE, FLA.

On account of the unexpected demand for the **PREFERRED STOCK** of this Company, occasioned by the liberal inducement previously offered, all sales made on and after November 28th, 1891, will be upon the following terms only, and not as heretofore advertised:

FOR A SHORT TIME ONLY, the Company offers for sale a limited amount of its Preferred Stock at **ONE HUNDRED AND FIFTY DOLLARS** per share, giving as a bonus with each share sold **TWO SHARES OF COMMON STOCK**, with the sole restriction that such Common Stock shall be surrendered to the Company at any time within one year from date of original purchase, upon tender by the Company of **ONE HUNDRED DOLLARS PER SHARE**.

**CAPITAL \$1,500,000, full-paid, divided as follows:**

\$500,000 8 per cent. Preferred Stock; \$100—par.

\$1,000,000 Common Stock; \$100—par.

## PROSPECTUS.

### ORGANIZATION.

The Company has been organized under the personal supervision of the well-known law firm, Balch & Rackemann, Counsellors and Conveyancers, of Boston, and Mr. John W. Weed, of New York, a well-known Attorney. Mr. B. C. Mudge, the President of the company, is a man of unquestioned executive ability and experience, having successfully established systems of water works in many of the prominent cities and towns of New England. He has also recently refused a flattering offer to take charge of the construction of a proposed railroad in order to give his entire attention to the development of the company's property. He is now located at the mines where he will devote his time to the interest of the company. Mr. F. E. Owen, the Treasurer, formerly connected with the Boston Post Publishing Co., which position he resigned to accept the Treasurership of this company, is well-known among his large circle of business acquaintances as a man of strict integrity and large experience in financial and business affairs.

The titles to the property are perfect, and the property is absolutely owned by the company, being entirely clear and free from all encumbrance with the exception of \$300,000 7 per cent. ten year Gold Bonds, which have all been placed; the entire proceeds being devoted to the purchase of the property.

### PROPERTY.

The property owned by this Company is situated in Leon County, Florida, two and one-half miles west of Tallahassee on the Florida Central & Peninsular Railway, three-quarters of a mile north of the railway. A railway in course of construction, the Gainesville & Tallahassee, will pass directly through the property if given the right of way. The Florida Central & Peninsular Railway has a branch which puts the property within seventeen miles of tidewater at St. Marks, Florida, and other railways are in contemplation. The property consists of sixteen hundred and a xy-nine acres of upland in one body, about one and three-quarters miles long by three-quarters of a mile wide. It is nearly all cleared, and in good condition for agricultural purposes.

### PHOSPHATE DEPOSIT.

The Phosphate Deposit, as indicated by pits and borings, is one-half of a mile wide, and extends throughout the entire length of the property. There are now three open pits or shafts on the property, two in the middle, about one thousand feet apart, across the width of the deposit, and one three-quarters of a mile northwest of these, near the northwest end of the property. These shafts are six feet square, and go to a depth of sixty feet. There have been also at least fifty borings made in all parts of the deposit, which show in a general way the following deposit of phosphate of lime:

The First Stratum, called purple rock, is seven and one-half feet from the surface. This stratum is 17 feet thick. It is a low grade, averaging about 55 per cent. Bone Phosphate of Lime without washing or separation. It requires separation to eliminate the sand, thus making a high-grade phosphate of about 73 per cent. This is not regarded at present as being of great value. Below this stratum is found white sand seven feet thick, and then fire-clay, available for all purposes that such material is used for, four feet thick.

Second Stratum is a soft Phosphate 4 feet thick, of a high-grade, running about 73 per cent. Bone Phosphate of Lime. Immediately below this is the

Third Stratum of granulated Bone Phosphate, analyzing about 55 per cent. Bone Phosphate of Lime crude, and 70 per cent. washed. This is a wonderful deposit, being all ready ground by nature, and can be used as a fertilizer just as it is taken from the earth. Next below this is the

Fourth Stratum of fine Hard Rock Phosphate, 12½ feet thick, and analyzing over 75 per cent. Bone Phosphate of Lime crude, with only 55-100 of 1 per cent. oxide of iron, and 25-30 of 1 per cent. alumina. This is the finest and principal stratum, having, as further compensation for its depth, greater uniformity in quality and the absence of pockets, showing a reliable and continuous stratum throughout.

### AMOUNT OF PHOSPHATE.

The amount of phosphate on this property is practically unlimited, having been estimated by Prof. Lawrence C. Johnson, of the U. S. Geological Survey, who has personally investigated this property, as being between 60,000,000 and 100,000,000 tons, including all grades. There is no water to interfere with working, all being above the fire-clay, or practically surface water.

### ESTIMATED PROFIT.

The present price for high-grade phosphate on the English market is 11d., or 22 cents per unit or per centum per ton, or for 70 per cent. grade, the price would be \$15.40 per ton. Allowing 30 per cent. of this value for cost of mining, handling, transportation, insurance, brokerage, etc., which is liberal in the extreme, leaves a net profit of about \$7.70 per ton.

This does not include the granulated or ground bone phosphate stratum of the same surface dimensions, but eight feet thick; nor the upper stratum, which is 17 feet thick. The expense of mining the phosphate is certainly less than mining coal, as there is no blasting, or water to contend

with, and has never been estimated to exceed 50 cents per ton, and the practical working of other well-known companies shows this estimate to be conservative.

### INCOME ANNUALLY.

With our three separate sets of hoisting machinery, each with its own boiler and appurtenances, and capable of lifting 3,000 pounds per trip, one hundred tons of phosphate is a very low estimated output daily for each shaft; in fact, two hundred tons per day per shaft may be considered fairly reasonable. Assuming, however, that 300 tons per diem are mined and sold at a net profit of \$7.50 per ton, produces an income of \$2,250 per diem, or for 300 days \$675,000 net, which leaves 8 per cent. on the \$850,000 preferred stock, and over 6½ per cent. on the common stock. This is not, in any sense, excessive estimation, and can be borne out in fact by reference to other companies not as favorably located, nor possessing such a large amount of high-grade phosphate.

### MARKET FOR PRODUCT.

The demand for high-grade phosphate is practically unlimited, not only in the United States, but throughout the continent of Europe, phosphoric acid being the basis of all vegetable growth, and the main constituent of all fertilizers. The world's consumption of phosphate, which must be an indispensable article of commerce until that probably distant day when the chemist shall manufacture in the laboratory what the agriculturist now grows in the field, is rated at 1,500,000 tons, and increases annually at the rate of 25 per cent. or 30 per cent. In five years 4,000,000 tons will be required, and in twelve years 12,000,000 or more will be required to supply the market for the season.

Since the abandonment of the Canadian fields there remains the product of the States of South Carolina and Florida as the chief sources of the world's supply, and with South Carolina rock averaging about 37 per cent. bone phosphate, and costing some \$3.00 per ton to mine, as against 70 per cent. to 80 per cent. bone phosphate, and a cost of only 50 cents per ton to mine in Florida, it will not be long before the latter State will maintain absolute supremacy, if, in fact, she does not hold it to day.

### QUALITY OF LA PIERRE ROCK.

In relation to the quality and grade of phosphate produced by the La Pierre Phosphate Company, Messrs. Stillwell & Gladding, chemists to the New York Produce Exchange, and, doubtless, among the highest authorities as phosphate chemists, state the following, over their signature, and after a careful analysis of our product:

"We have no hesitation in pronouncing this phosphate a high-grade article of the highest commercial and manufacturing excellence. Very truly,  
STILLWELL & GLADDING."

### BENEFITS OF FERTILIZERS.

It is estimated that the introduction of phosphatic manures has increased the product of cotton in the South from 4,000,000 to about 8,000,000 bales. The increased yield of an acre sowed with wheat, and properly dressed with fertilizers, has been phenomenal, more than doubling the bushels per acre, and in some instances many fold.

### TRANSPORTATION FACILITIES.

The Florida Central & Peninsular Railway Co. are affording this company every facility they can for the cheap transportation of the phosphate, and have erected large store-houses and elevators at Fernandina, Florida, for the ready handling of same for shipment to foreign and domestic markets. Two other roads are now being constructed to reach this property, thus guaranteeing competitive rates. Direct shipments can be made from Tallahassee to all parts of the United States and Europe, and the facilities are all that could be desired.

### FACTS AND PROSPECTS.

With such an enormous tract as this company possesses, situated within three miles of the capital of the State; within one mile of a trunk line railway, and with a spur track connection; with two other railways striving to compete for business; with a large quantity of high-grade phosphate for the foreign market, and a large amount of medium-grade for the American market; with every facility for mining at a remarkably low price; with no expensive pumping to contend with; with an enormous profit for the product, the demand for phosphates, in the present methods of high agriculture, increasing more rapidly than the supply; and with honest management, there would seem to be nothing wanted to ensure immediate and complete success, rendering the stock of the company not only very valuable, but commanding a premium for generations to come.

## LA PIERRE PHOSPHATE COMPANY,

Incorporated under laws of West Virginia.

B. C. MUDGE, President.

F. E. OWEN, Secretary and Treasurer.

BOSTON OFFICE, 738 EXCHANGE BUILDING.

THE OLD COLONY TRUST COMPANY, of Boston, whose statement we append below, is Trustee for Bondholders and Transfer Agent for the Stockholders.

STATEMENT—AUGUST 1, 1891.

| Assets.                                   |                       | Liabilities.                        |                       |
|---|-----------------------|-------------------------------------|-----------------------|
| Loans.....                                | \$3,529,399 47        | Capital Stock.....                  | \$1,000,000 00        |
| City and other Bonds at or under par..... | 389,295 19            | Surplus.....                        | 500,000 00            |
| Deposit Vaults.....                       | 69,714 35             | Undivided Profits and Interest..... | 112,588 70            |
| Expenses Paid.....                        | 11,918 93             | State Tax.....                      | 11,000 00             |
| Cash on hand.....                         | 210,419 97            | Deposits.....                       | 3,542,576 52          |
| Cash in Bank.....                         | 962,417 31            |                                     |                       |
|   | <u>\$5,166,165 22</u> |                                     | <u>\$5,166,165 22</u> |

APPLICATIONS FOR STOCK OR FOR INFORMATION CONCERNING THE PHOSPHATE COMPANY SHOULD BE ADDRESSED TO THE TREASURER

## The Markets.

OFFICE MANUFACTURERS' RECORD,  
BALTIMORE, January 20, 1892.

Only one significant feature in the iron trade has been developed during the past few days, and that was an unwillingness among manufacturers generally to book large orders for spring delivery at present prices. Last week makers here and there were declining to do so, but this week the disposition is more general. This, of course, means that buyers have been heard from quite largely. More iron and steel is selling than in December, but the heavy demand which the trade knows must come is still hanging back. Stocks in consumers' hands are not heavy in any part of the country. It is safe to assert that sharp competition will not break out early in the year. Prices have been already depressed to a low point. Pig-iron makers would like to book 3 to 6-month orders, but so much has been said of an increasing output that buyers are half afraid to contract for more than a month or two's stocks at a time. Should production remain at a standstill for one month longer it will have a favorable effect on prices. Bessemer and low phosphorus irons are selling well. Forge is dragging at \$14 to \$15. Several large dealers in the Northwest have been making tempting offers in the South for spring and summer deliveries. Steel billets are very low, and buyers are not looking beyond 30 days. Pittsburg and Wheeling interests are endeavoring to fix a minimum price for billets. The iron mills throughout the country are gradually getting into better shape, but prices continue very low. The nail-makers are again increasing production in the face of large stocks and low prices. The sheet-iron makers report a good week's business, which they think will continue, as large consumers will probably gather up good stocks to start with, particularly of galvanized. Pipe-makers are looking for heavy orders very soon. Tube-makers are now quite busy. The plate mills are running pretty full, and so are the mills on structural material and steel rails, but the present demand is only for the next month or two's requirements.

While the iron trade proper does not show that any change has yet set in, there are many indications of a heavier demand in products into which iron and steel enter. The railroad companies, it has been repeatedly said, will be heavy buyers. Besides this there will be large quantities of plate and structural material wanted for general construction work and engineering enterprises. Ship-building demands will be unusually heavy. Makers of machinery of all kinds see a busy year before them. Hardware manufacturers, barb-wire interests, implement manufacturers and a host of minor interests all see a good deal of work looming up. Railroad earnings are quite favorable and the monetary situation continues satisfactory, at least as it is indicated by the supply of funds at New York. At the same time there is a reserve and a hesitancy manifest in all trade and manufacturing circles. Something is wanting to give confidence. Shrewd business men think they see in the present movement the material for a sudden advance when the great bulk of buyers finally decide to come in and provide more or less freely for the spring and summer requirements.

### HARDWARE.

Trade continues light, and probably will hardly show much improvement in general lines during the early months of the year. Some lines of season staples, as chain and handled hoes, are in active demand, and the manufacturers are behind their orders. Prices on all lines except those fixed and maintained by combinations are most unsatisfactory, and the manufacturers, it is

said, anticipate a year of short sales and shorter profits. The agitation regarding decreased acreage of cotton planting this year has evidently struck a responsive chord in the minds of the planters, and we trust the efforts to accomplish so desirable an object will be successful. The recent advance in screws is being firmly maintained by the manufacturers.

THE receivers of the Western & Atlantic Railroad will sell at public auction in Atlanta, Ga., on February 2, 1892, caboose, box, coal and lumber cars, and freight engine. An opportunity will be given to secure good second-hand rolling stock cheap.

### IRON AND BRASS FOUNDERS.

**HAIGHT & CLARK,**  
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Fine Gray Iron, Brass and Bronze Castings. Send samples for estimate. Nickel, Brass and Bronze Plating. Agents for the GÖRTZ BOX ANCHORS and POST CAPS.

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26 Furnaces Within Telephone Call.

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Superior to Hair in all respects and costs less.

"This fiber was used exclusively in the building of the TAMPA BAY HOTEL CO., because it made better work than any article offered in any market."—J. A. WOOD, Architect, 15 Broadway, New York. Address, LUMMIS MFG. CO., Fernandina Fla.

### ACME CEMENT PLASTERING

You can have a wall on your house as hard as portland cement at lime mortar prices. Estimates furnished for work at any point.

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Stationary and Portable

Engines and Boilers, Saw and Grist Mills,

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### LEVIATHAN BELTING.



Is the Strongest,  
Runs the Most  
Evenly and Best  
Adapted for  
Cotton, Woolen, Saw  
and Planing  
Mills  
Brick and Tile  
Works and  
HEAVY  
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Generally.

**Main Belting Co.**

1219-1235 Carpenter St.

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248 Randolph Street,  
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## GRAPHITE PAINT.

FOR TIN OR SHINGLE ROOFS AND IRON WORK  
IT IS ABSOLUTELY WITHOUT AN EQUAL.

A tin roof well painted will not need repainting for 10 to 15 years. If you need any paint it will pay you to send for circular. **JOSEPH DIXON CRUCIBLE CO., Jersey City, N. J.**

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**DIRECT REPRESENTATIVES:**

AMERICA AXE & TOOL CO., Axes, Hatchets, Adzes, Scythes and Eye Hoes.  
HUBBARD & CO., Shovels and Spades.  
AMERICAN SCREW CO., Screws, Bolts and Wire Nails.  
A. FIELD & SONS, Tacks and Nails.  
WHEELING HINGE CO., Wrought Goods, Butts, &c.  
L. D. FROST & SONS, Philadelphia Carriage Bolts.

JOHN SOMMERS' SON, Faucets.  
NICHOLSON FILE CO., Files.  
HARTFORD HAMMER CO., Hammers and Sledges.

BOSTON & LOCKPORT BLOCK CO., Tackle Blocks and Trucks.

SHEBLE & KLEMM, Forks and Rakes.

HOLROYD & CO., Stocks and Dies.

CLARK BROS. & CO., Carriage and Plow Bolts, Nuts, &c.

BRANFORD LOCK WORKS, Locks and Knobs.  
WHITE MOUNTAIN FREEZER CO., White Mountain, Granite State and Arctic Freezers.  
BLAIR MANUFACTURING CO., New Easy and Bay State Lawn Mowers.  
WINCHESTER HANDLE MFG. CO., Fork, Shovel and Hoe Handles.  
SAMSON CORDAGE WORKS, Braided Sash Cords, &c.

OLD DOMINION IRON & NAIL WORKS CO., Walker's Horse and Mule Shoes.

PLUME & ATWOOD MFG. CO., Copper Rivets, Jack Chains, Hand Lamps & Burners.

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IT BELTS THE EARTH AND MAKES THE MOON SPIN LIKE A TOP

Shultz Patent Leather Woven Link Belt

ALL LEATHER. NO IRON ROD OR HINGE. OLD STYLE LEATHER LINK AND IRON ROD BELT AND ROPE TRANSMISSION SUPERSEDED.

SAVE YOUR POWER. YOUR BELTS. YOUR MONEY.

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OUR BELTING IS TANNED ON THE SURFACES ONLY. INTERIOR IS RAWHIDE. THE ONLY PERFECT BELT MADE. NO SLIPPING OR LOST MOTION.

RAWHIDE LACE LEATHER AND PICKER LEATHER.



# THE NEWPORT NEWS BUILDING COMPANY.

Authorized Capital \$500,000.

Shares \$100 Each.

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 JOHN H. MONTAGUE, Richmond, Va., **VICE-PRESIDENT.**  
 SAMUEL S. ELAM, Richmond, Va., **SECRETARY.**  
 GEORGE A. SCHMELZ, Newport News, Va., **TREASURER.**  
 L. P. ROUTT, Richmond, Va., **GENERAL AGENT.**

## BOARD OF DIRECTORS.

A. S. BUFORD, Richmond, Va., ex-President Richmond & Danville Railroad Company.  
 JOHN H. MONTAGUE, Richmond, Va., President Merchants and Planters' Savings Bank.  
 E. A. CATLIN, Richmond, Va., President Security Savings Bank.  
 W. C. SEDDON, Baltimore, Md., of W. C. Seddon & Co., Bankers and Brokers.  
 HON. GEORGE D. WISE, Richmond, Va., Member of Congress Third Congressional District of Virginia.  
 GEORGE A. SCHMELZ, Newport News, Va., of Schmeltz Brothers, Bankers.  
 C. M. BRAXTON, Newport News, Va., Vice President First National Bank.

## THE NEWPORT NEWS BUILDING COMPANY.

The Newport News Building Company, duly incorporated under the laws of the State of Virginia, has secured three hundred beautiful residence lots at Newport News for the purpose of erecting buildings thereon and otherwise improving the property.

## FINANCIAL PLAN.

The financial plan of the company is as follows:

The capital stock is to be \$500,000, divided into shares of \$100 each.

Under the charter, when \$60 per share shall have been paid on each share of stock, no further assessments will be made, and full-paid certificates will be issued to the holders thereof.

The payments for stock are to be as follows:

\$5 per share upon date of subscription.

\$5 per share in one month.

\$5 per share in two months.

\$5 per share in three months.

\$5 per share in four months.

\$5 per share in six months.

\$5 per share in eight months.

\$5 per share in ten months.

\$5 per share in twelve months.

\$5 per share in fourteen months.

\$5 per share in sixteen months.

\$5 per share in eighteen months.

Building companies doing business upon this plan have paid dividends ranging from 12 to 20 per cent per annum. It is confidently believed that with the superior advantages possessed by this company it can do equally as well.

## REDEMPTION OF STOCK.

Stock, when fully paid in accordance with this prospectus, will be received by the company in payment for houses or lots at \$65 per share, being a premium of \$5 per share over cost of same.

## BEAUTIFUL LOCATION.

The company's property lies very near Newport News and between Newport News and Hampton.

The Chesapeake & Ohio Railway runs near it, and the electric line connecting Newport News, Hampton and Old Point places it within a few minute's ride of the business centre of the former city. No lot will be over five blocks from the electric line.

Every lot commands a view of Hampton Roads, and it can be honestly said that no property in the Newport News section is more desirable for residence purposes, for it is right in the line of all the valuable and fashionable development which is now attracting so much attention.

## WONDERFUL DEVELOPMENT.

When it is remembered that the growth of Newport News is rapid and substantial (it has now a population of about 8,000); that the wages paid here are better than in almost any other city in the country; that the finest dry-dock and ship-building works in the world are here; that a great number of other important industries are in operation, and that others are projected; that a high class of skilled workmen find ready employment, and that such workmen are coming in by hundreds; that one of the greatest trunk lines in the United States has its deep-water terminus here; that northern and foreign capital is pouring into this section by the million, it is not surprising that the real estate business and the building trades are more active here than in any other new city in the country.

## DEMAND FOR HOUSES.

A lively demand for new houses and the phenomenal success of building companies are among the causes that brought about the organization of this company.

The property of the company has been secured at a comparatively low figure—prices having been agreed upon before the recent advances in real estate—and it is believed the company will not only make money, but big money. Indeed, no such solid and attractive scheme of this character has been organized in recent times. If the company had a house on every one of its lots to-day there would be tenants or purchasers for all of them.

## MONTHLY INSTALLMENTS.

Houses built by the company will be sold upon easy monthly installments or otherwise.

For further information apply to

THE NEWPORT NEWS BUILDING COMPANY,

821 East Main Street, Richmond, Va.

FILL UP the following BLANK and forward, with \$5 per share, to either the Secretary or General Agent at Richmond, Va.

I, \_\_\_\_\_ of \_\_\_\_\_

State of \_\_\_\_\_ do hereby subscribe to

Shares of the Capital Stock of THE NEWPORT NEWS BUILDING CO., on the terms and conditions set forth in the printed Prospectus of said Company, receipt of a copy of which I do hereby acknowledge, and the same is hereby made the basis and a part of this Contract between me and said Company.

This \_\_\_\_\_ day of \_\_\_\_\_ 189 \_\_\_\_\_

Subscriber.

No. of Street \_\_\_\_\_

**GOOD AGENTS WANTED.**

## Eastern Lumber Markets.

[Special Cor. MANUFACTURERS' RECORD.]

NEW YORK, January 19 1892.

Within the past ten days an unexpected and rather surprising demand for lumber and timber has broken out in some Western markets. Up to this writing it has not shown itself here. The movement began with an active demand for yellow pine and was extended to various kinds of flooring and ceiling stuff, joist, clean boards, strips and plank. This activity is caused by a demand which comes from a number of large operators, who have a vast amount of work on hand and who do not dare to let the market run up on them. It does not mean that a general demand for spring and summer stocks has set in, but, of course, it is probable that the action of these few large operators may influence the action of many smaller ones, and that there may be quite a movement during the next two or three weeks in all kinds of stuff. Throughout the Northwest the manufacturers of sash, doors and blinds are shut down and will remain shut down for six weeks. Stocks are very large, and in no other way than restriction can there be anything like harmony or better prices.

In and around this city a great deal of lumber will be wanted for railroad terminal work. The exports of lumber, timber and wood products generally for the past year was \$7,036,103. Our receipts from eastward points for the year were 167,092,000 feet; from the South, 240,000,000 feet. Total receipts from all points for year, 1,165,692,000 feet, which shows a decline over 1890 of 117,000,000 feet. In addition there were 41,775 logs, 115,000,000 staves, 60,000,000 shingles, 252,000,000 laths, 147,000 pieces piling.

The association is in pretty good shape, and the yellow pine combination feels that it can manage conflicting interests better than ever before. The association members have entered on the work of making the organization worth something. The outside lumber associations are all at work. The Buffalo Exchange is endeavoring to secure better rates from the railroads, as are exchanges in other localities. The opinion at Buffalo is that large early spring orders will be placed. Lumbermen all over the East as far as Boston are coming to the conclusion that there is not what could be called an abundance of good stock, and they therefore think that the outlook for the year is exceedingly bright.

In Southern lumber of all kinds, including hardwoods, there is confidence of strong and steady prices. The yellow pine stocks are not above requirements. A little sharp demand between now and February 1 would alarm many who have been looking for continued inactivity. North Carolina pine is strong, and there are no large offerings. Considerable lumber is promised this spring from Gulf ports, and West Virginia is coming up as a lumber State. A good deal of oak territory has been reached during the past year by railroad additions. Plain and quartered oak were weak a month ago, but to-day are stronger, though it is hard to tell why, because sales have not been large and frequent enough to account for it. Poplar here and elsewhere in the East exhibits signs of scarcity. At a number of yards here stocks have actually run low. Ash is once more being offered at acceptable prices. Good cherry is strong, but there is more poor stuff offered than is wanted. Cypress is quoted a little higher. Spruce in coming into competition with hemlock at some new points, for instance, at Philadelphia.

Taking the lumber trade all through, there are several interesting points of recent development. Buyers may turn out in force and push prices upward. Manufacturers are certainly in better shape than they were twelve months ago.

## Gang Edgers

Saw Mills,  
Shingle and  
Lath Machines  
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BRENNAN & CO.

Southwestern Agricultural Works,  
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## THOS. J. SHRYOCK & CO.

WHOLESALE

Lumber and Commission Merchants,  
YELLOW PINE and HARDWOOD,  
Shryock's Wharf, Baltimore, Md.  
Correspondence Solicited.

## THE EDWIN BELL & SONS CO.

MANUFACTURERS OF

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Stock, also HOOP MACHINERY.  
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Will cut 7,000 pail bottoms in ten hours.

ALVIN STREETER,

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PATENTEE AND MANUFACTURER OF

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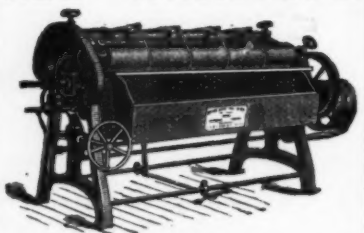
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Makes a continuous record day and night of  
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 Best Boiler Feeders  
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 Send for price list.  
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FOR THE BEST MILL  
 FOR GRINDING AND DISINTEGRATING  
**Phosphates, Clays,**  
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 CORRESPOND WITH  
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Haines, Jones & Cadbury Co.'s  
**IMPROVED  
 Blast Furnace.**  
 Will melt 10 pounds of solder in 4  
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INCLUDING  
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 with Patent Brake, Double  
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## Veneering & Handle Machinery.

The I. E. MERRIT MACHINERY CO.

MANUFACTURERS OF  
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FOR  
 Veneer, Fruit Package and Cheese Box  
 Factories, Handle, Spoke, Hoop and  
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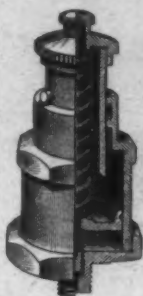
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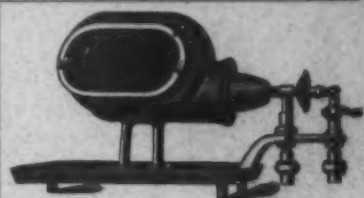
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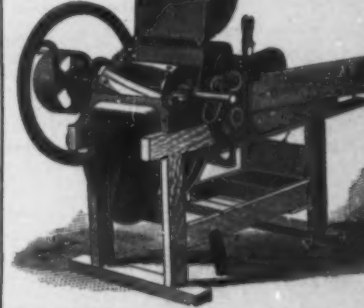
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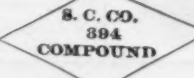
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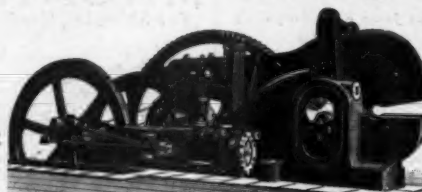
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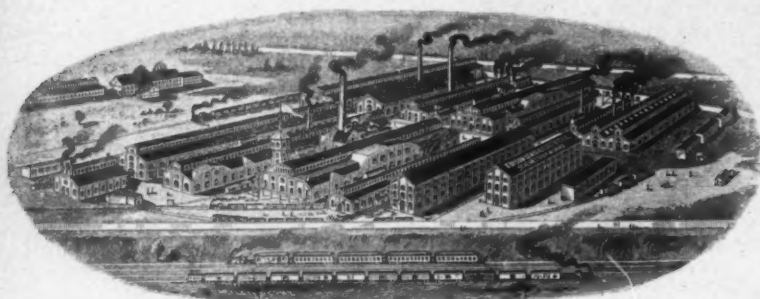
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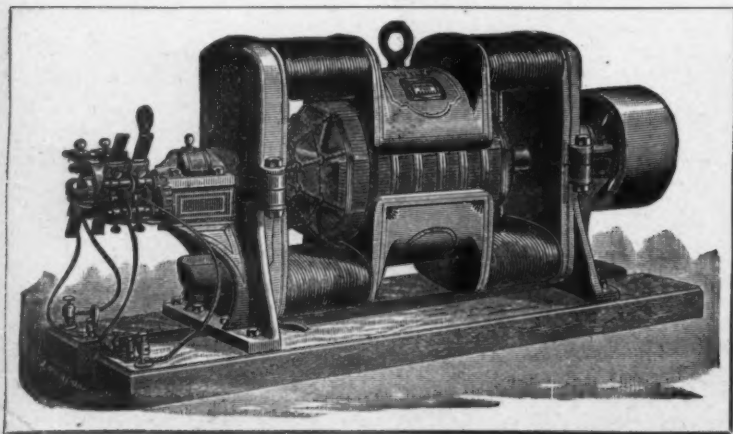
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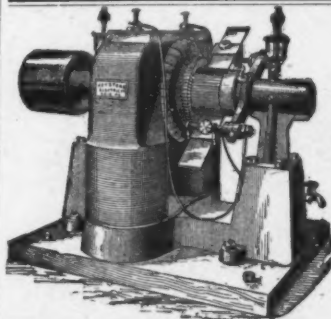
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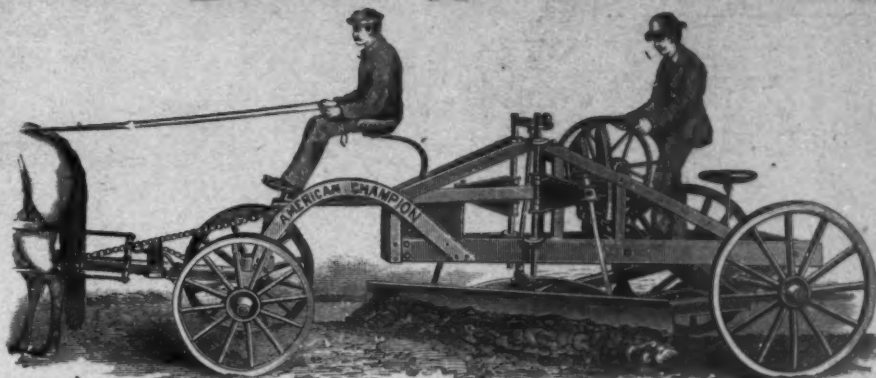


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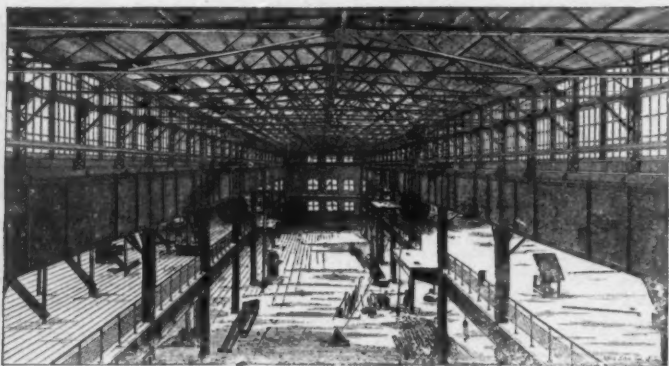
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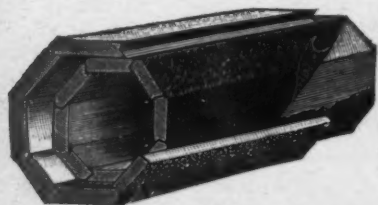
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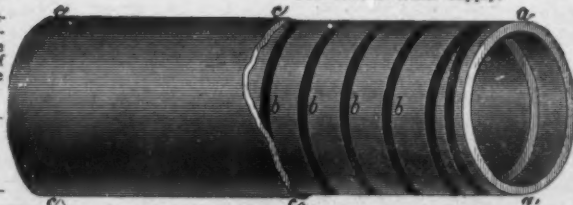
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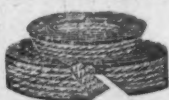
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